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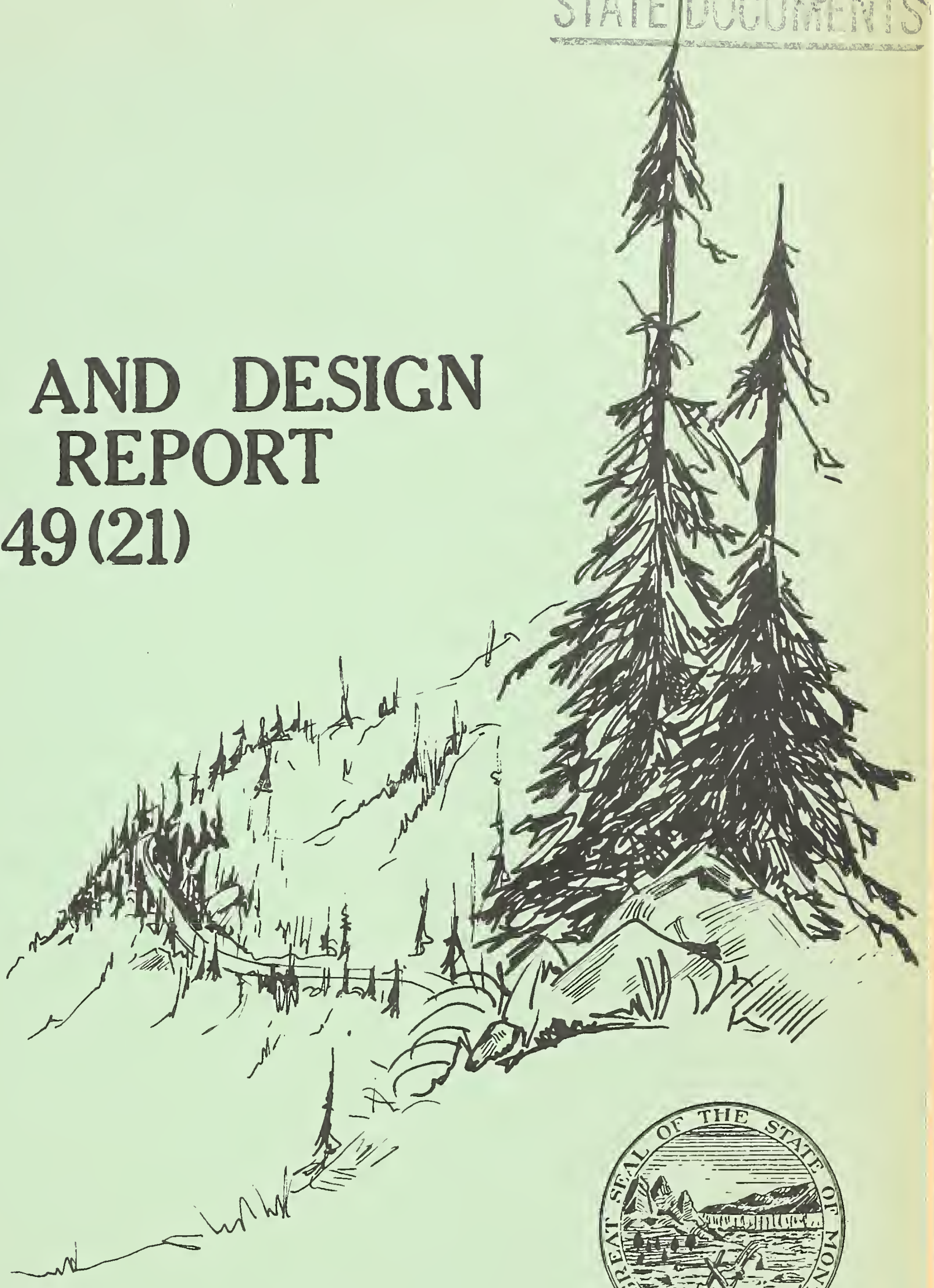
STATE DOCUMENTS

LOCATION AND DESIGN STUDY REPORT
RF 249(21)



MAC DONALD PASS EAST

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

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Helena, Montana 59601

Montana State Library
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LOCATION AND DESIGN STUDY REPORT

PROJECT RF 249 (21)

MACDONALD PASS - EAST

****

PRECONSTRUCTION BUREAU

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS
HELENA, MONTANA

FEBRUARY, 1972

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SECTION 1

LOCATION AND DESIGN STUDY REPORT

COMBINED
LOCATION AND DESIGN STUDY REPORT

RF 249 (21)

MACDONALD PASS-East

In accordance with Paragraph 10 of PPM 20-8 the following study report has been prepared for purposes of obtaining approval of the route location and highway design on Montana Forest Highway Route No. 28 - MacDonald Pass Highway.

Route Location

Forest Highway Route No. 28 is that portion of U.S. Highway 12 that crosses the Continental Divide approximately 16 miles westerly of Helena, Montana, through MacDonald Pass. The route description officially states the route begins at Dog Creek and ends at Ten Mile Creek, a distance of 10.8 miles. (See Exhibit No. 1).

In 1955 aerial reconnaissance survey was undertaken to determine if new route possibilities for a 16-mile portion of U.S. Highway 12 - Forest Highway 28, existed in the MacDonald Pass area. Approximately 70 miles of route alternatives on new location were determined to be certain that no possibilities were overlooked or discarded without study. (See Exhibit No. 2).

Two passes were found in the vicinity of MacDonald Pass, one of which is Priests Pass at the head of Spring Creek north of MacDonald Pass, and the other is an unnamed pass which lies a short distance to the south of MacDonald Pass at the head of Walker Creek. Comprehensive examination of the aerial photographs failed to disclose any additional passes through which feasible route alternatives might be projected, either to the north or to the south of MacDonald Pass.

Each alternative originates on Montana Forest Highway Route 28, U.S. 12, at the crossing of the Little Blackfoot River near Elliston, and terminates on the same highway in the SW 1/4 of Section 28, T. 10 N., R. 4 W. Three through routes, A, B, and C-A, were determined. Subsequently, connecting sections on new location combined with portions of these three made eight other alternatives and a total of eleven alternate routes. The routes, identified by letter combinations, and their approximate lengths, as determined from the aerial photographs are as follows:

Route	Total Mileage	New Location Mileage
A	18	14
B	20	19
C-A	18	12
C-D-C-A	18	14
C-E-A	19	17
C-E-A-E-B	20	20
A-E-B	19	17
A-F-C-A	17	6
C-E-A-F-C-A	18	9
A-F-G-C-A	17	9
C-E-A-F-G-C-A	18	11
Existing Highway	16	0

Route A through MacDonald Pass and Route B through Priests Pass were developed to ease grade and alignment over the Continental Divide. Route A is approximately 18 miles long and utilizes four miles of the existing highway, requiring 14 miles of construction on new location. Route B follows the present highway for only one mile, requiring 19 miles of construction on new location. Route C-A, which crosses the Divide south of MacDonald Pass, was located in an attempt to shorten the length of new construction. The section of this route which lies east of the Divide has generally poor exposure and sustained grades approximately six percent. Route C-A requires 12 miles of construction on new location, and six of its 18 miles are along the present road. Four other route alternatives are comprised of parts of Routes A, B, and C-A, and Section D and Section E.

As a means of comparing one alternative with another, benefit ratios were developed, using as a guide "A Policy on Road User Benefit Analyses for Highway Improvements," approved in May 1952 by the Committee on Planning and Design Policies of the American Association of State Highway Officials. From this analysis it was determined that, in a road-user benefit sense, construction on any one of the seven alternatives cannot be justified for present traffic or any foreseeable increased traffic. Realignment of the present road and introduction of sections on new location to reduce curvature and grades are a more feasible solution.

With these facts in mind, Sections F and G were located for combination with the western part of Route A and also with Section C-E to form four additional routes, and make a total of eleven alternatives. Section C-E, extending from the western terminal point to the junction with Route A, is six miles long and one mile longer than the section of Route A between the same points. The topography Section C-E traverses makes possible the attainment of better grades, and equivalent or better curvature, than the comparable section of Route A to the MacDonald Pass. Eastward from the Pass a 2.5 mile portion of Section F lies along the present road, and the remainder is on new location. The portion on new location contains better curvature and less steep grades than are obtainable should improvement be restricted to the present road with its 10 and 12 degree curves. Section G departs from Section F with the same purpose of attaining better grades and alignment than offered by the present road or the alternative portion of Section F.

Section C-E and the section of Route A west of MacDonald Pass in combination with Section F and Section G and extensions on Route C-A to the eastern terminal point make the four additional alternate routes. These routes contain less mileage on new location than the other seven; accordingly, benefit ratios indicate they are justifiable.

After evaluating all the alternate locations, it was determined that utilization of the existing alignment for the reconstruction of the highway between Elliston and Helena would be the most prudent and feasible alternate for the following reasons:

1. There would be substantially less impact on the natural environment by utilizing the existing alignment. All other alternates require from 6 to 20 miles of construction on new alignment. This would result in new and large construction scars on a relatively undisturbed terrain without significant benefits in fast, safe, and efficient transportation to the traveling public.

2. The effect on established wildlife patterns, feeding habits, and potential nesting sites would be more severely impacted than by following the existing highway corridor. Some additional disruption of land use within the immediate vicinity of existing highway will result in the reconstruction process, however, this is considered relatively minor when compared to the amount of land use that would be affected both directly and indirectly under any of the proposed alternates.

3. The total travel distance along the existing corridor is less than any of the alternates studied resulting in a time and distance saving to the road user.

4. If the facility were constructed on new location, the present travelway would have to be maintained to serve the existing development in the area. This would result in the additional cost of maintaining duplicate and parallel facilities without any appreciable benefits to the region.

5. Reconstruction along the present corridor lends itself to the stage construction of the highway making better use of the limited funds available and gives the road user the benefits of the money expended at the earliest possible date.

6. The anticipated construction costs would be less along the existing corridor. The terrain along all the alternates is quite similar and additional length of the alternates would result in a higher expenditure to obtain the same end result.

7. The exposure factor on the existing MacDonald Pass location is better than a majority of the other alternates.

8. Following the existing corridor would result in a minimal change in the social patterns and economic opportunities in the area. The orderly development of the region could continue with a minimum disruptive effect.

The final alternate considered was to take no action at all and retain the existing alignment and grades. This would cause an increase in the undesirable aspects of the human environment brought about by increasing traffic volumes, deterioration of the highway capacity, and increased time, operating, and accident costs for the road user.

Once the decision was made to make the existing corridor the preferred choice in route location, it was mutually agreed between the F.H.W.A. and the Montana Highway Commission to divide the actual design and construction of the route. A point approximately 1,500 feet west of

MacDonald Pass Summit was selected as the dividing line. The Federal Highway Administration became responsible for the westerly portion of the route and the Montana Highway Commission took over the easterly section.

Highway Design

Project RF 249 (21), MacDonald Pass East, begins at the end of the proposed Forest Highway project, Station 235±, which is approximately 1,500 feet west of the MacDonald Pass Summit on U.S. 12 and extends easterly approximately 6.7 miles to Station 779+36.8 or to the beginning of Project F 249 (18) or a short distance east of the Rimini turnoff.

This proposed project basically follows the present highway with some straightening of curves to eliminate hazardous conditions. Four alternate alignments were studied between Station 328± and 385± to develop a curvilinear alignment that would reduce cut and fill scarring. These alignments were labeled "A", "B", "C", and "D". Investigations were made by those concerned as to which alternate to utilize. It was decided that alignment "D" would have the least impact on the landscape while providing satisfactory alignment and should therefore be utilized.

The proposed highway will consist of a 56-foot wide, four-lane, two-way rural section. The section will utilize four 12-foot driving lanes and two 4-foot shoulders. No median will be provided. The traffic lanes will be separated by utilizing paint striping only, due to the severe snow conditions in this area.

The project will generally follow the existing highway, except for some improvement of the horizontal alignment as discussed above. The maximum degree of curvature will be 10°00', and the maximum grade will be 7.00%. A 20-foot wide ditch will be provided in cuts and cutslopes will vary in steepness depending on the anticipated stability of the material encountered. Scenic turnouts will be provided where possible. Adequate drainage facilities will be provided throughout.

Adequate right-of-way will be secured to construct the highway.

The design of this highway will be in accordance with Montana Highway Commission's Standard Drawings, Field and Office Standards, and American Association of State Highway Officials Standard Specifications for Primary Highways.

The various social, economic, and environmental effects were evaluated and tabulated as follows:

1. REASONABLY, FAST, SAFE, AND EFFICIENT TRANSPORTATION

   This highway will be a 50 m.p.h. design throughout with the exception of utilizing a 45 m.p.h. design on the 10°00' curve located between Stations 407+70± and 429+50± with a 56-foot rural roadway width.

   Generally, a 6:1 inslope will be used and guard rail provided where required. The new highway will provide a slightly shorter route, have lesser curvature than the existing highway, and have a four-lane, two-way roadway which will provide a truck lane for both uphill and downhill traffic. Therefore, this highway should provide for reasonably fast, safe and efficient transportation.

2. NATIONAL DEFENSE

   This highway can be used for military vehicles if the circumstances should arise.

3. ECONOMIC ACTIVITY

   The main economic activity in this area is ranching. A commercial recreational facility is located approximately eight-tenths of a mile east of the beginning of the project and two-tenths of a mile left of Station 275±. A safer and better highway will be provided for the ranchers to market their products. The improved highway should also increase the use of the recreational facility. As a result, this highway should be an aid to the economic activity in the area.

4. EMPLOYMENT

The new highway should not effect the present employment in the area. Additional employment will be gained during construction of this project. Future employment may be gained if new recreational facilities are added after the construction of this new highway.

5. RECREATION AND PARKS

This highway does not serve as a direct route to any parks, but does provide access to numerous campgrounds, picnic areas, and recreational facilities. Some of the campgrounds this highway provides access to are as follows:

a. Cromwell Dixon Campground - located approximately two-tenths of a mile right of Station 236±.

b. MacDonald Pass Campground - located approximately one-tenth of a mile right of Station 254±.

c. Porcupine Campground - located approximately one-tenth of a mile right of Station 432±.

d. Bluebird Campground (girl Scout camp) - located approximately one-tenth of a mile right of Station471±.

The main commercial recreational facility this highway will provide access to is "Frontier Town" and is mentioned above under economic activity. This highway will therefore, serve as a reasonably fast and safe route to these areas.

6. FIRE PROTECTION

The highway will provide a reasonably fast and safe route for any fire fighting vehicles serving the area.

7. AESTHETICS

There should be no adverse effects on the aesthetics of the area due to the proposed highway other than cut and fill scarring, which will be held to a minimum.

8. PUBLIC UTILITIES

Agreements will be made with all affected utility companies prior to construction so that all facilities in conflict will be perpetuated. None of the utilities encountered will be damaged so as to effect the public in any way.

9. RESIDENTIAL AND NEIGHBORHOOD CHARACTER AND LOCATION

This highway will be rural throughout. It will provide access to the "Forest Heights Homesite Area", summer homes, ranches, and cabins. Therefore, this highway should have no effect on residential and neighborhood character other than providing a faster and safer access route.

10. RELIGIOUS INSTITUTIONS AND PRACTICES

This new highway should have no effect on religious institutions and practices.

11. CONDUCT AND FINANCING OF GOVERNMENT

New right-of-way will have to be secured for the construction of this project, but it should not effect the taxable property value appreciably. This highway should not have any effect on Government.

12. CONSERVATION

Erosion control will be incorporated into the design, as required, such as topsoil replacement, seeding, and embankment protectors. The Montana Fish and Game Department was contacted and they stated that they will require no special considerations to mitigate habitat losses to fish and wildlife that may be disturbed by construction of this highway. (See Section 11).

13. NATURAL AND HISTORIC LANDMARKS

This new highway will have no effect on any known natural or historic landmarks.

14. NOISE, AIR, AND WATER POLLUTION

The construction of this highway should have no effect on noise, air and water pollution.

15. PROPERTY VALUES

This new highway should not have any appreciable effect on property values. As mentioned previously, this new highway will generally follow the existing highway and therefore will not segregate property any more than it presently is.

16. MULTIPLE USE OF SPACE

Multiple use of space cannot be justified on this project since property is not that expensive.

17. REPLACEMENT HOUSING

This proposed new highway will not go through any residential buildings so replacement housing will not be required.

18. EDUCATION

This project will not effect the educational system other than provide a better school bus route if the proposed facilities are used.

19. ENGINEERING, RIGHT-OF-WAY, AND CONSTRUCTION COSTS

Engineering and construction costs should be similar to those of other projects in similar terrain. Some new and additional right-of-way will have to be purchased and costs should be similar to those of other projects in similar terrain.

20. MAINTENANCE AND OPERATING COSTS

The maintenance and operating costs should be comparable to other highways of similar nature with the exception of snow removal. Extreme snow conditions prevail on this route and with the new proposed roadway width, additional costs for snow removal will be encountered.

21. OPERATION AND USE OF EXISTING HIGHWAY FACILITIES AND OTHER TRANSPORTATION FACILITIES DURING CONSTRUCTION AND AFTER COMPLETION

The existing highway facilities will be used during construction with suitable flagging provided where and when necessary.

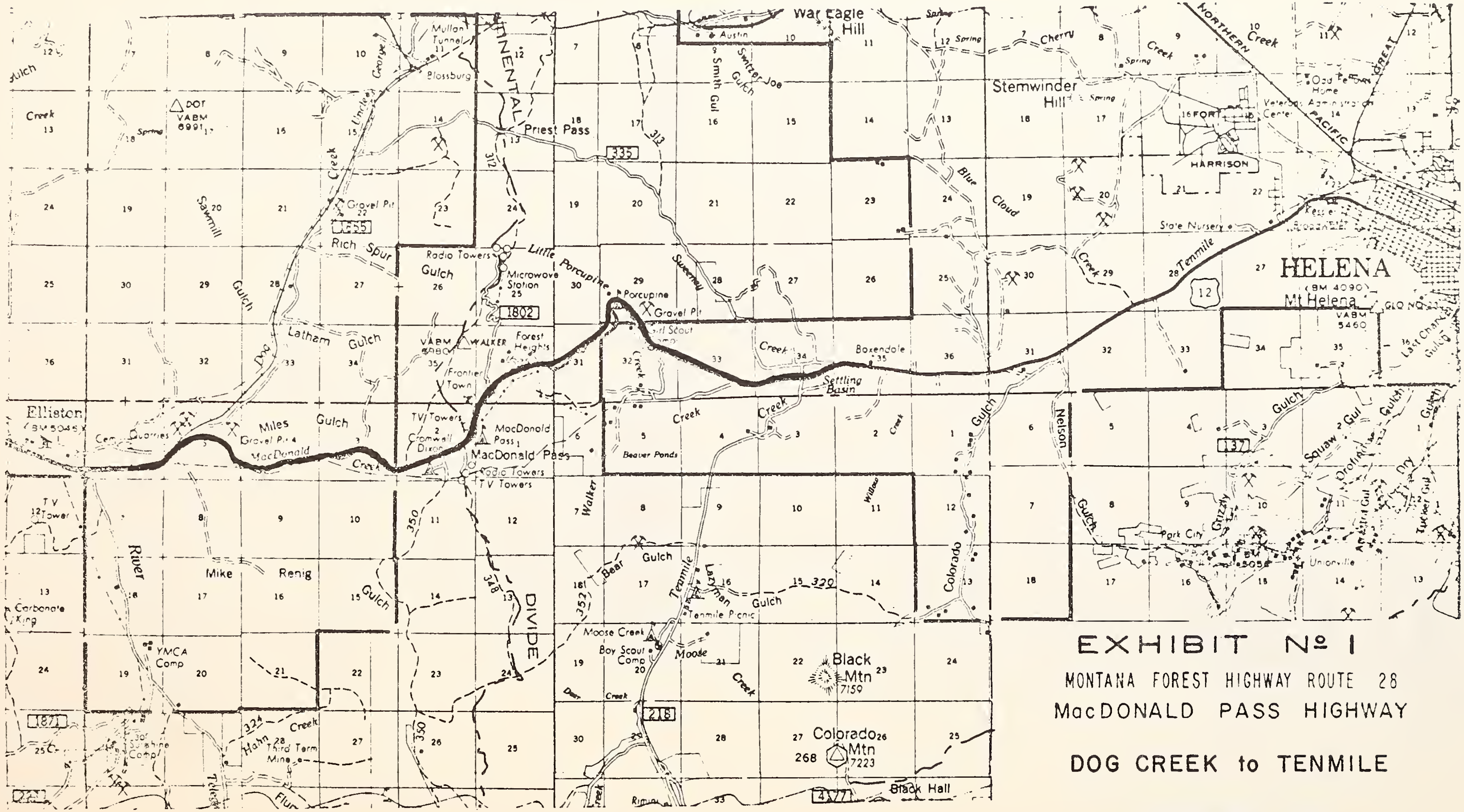


EXHIBIT Nº I

MONTANA FOREST HIGHWAY ROUTE 28

MacDONALD PASS HIGHWAY

DOG CREEK to TENMILE

DECEMBER 1971

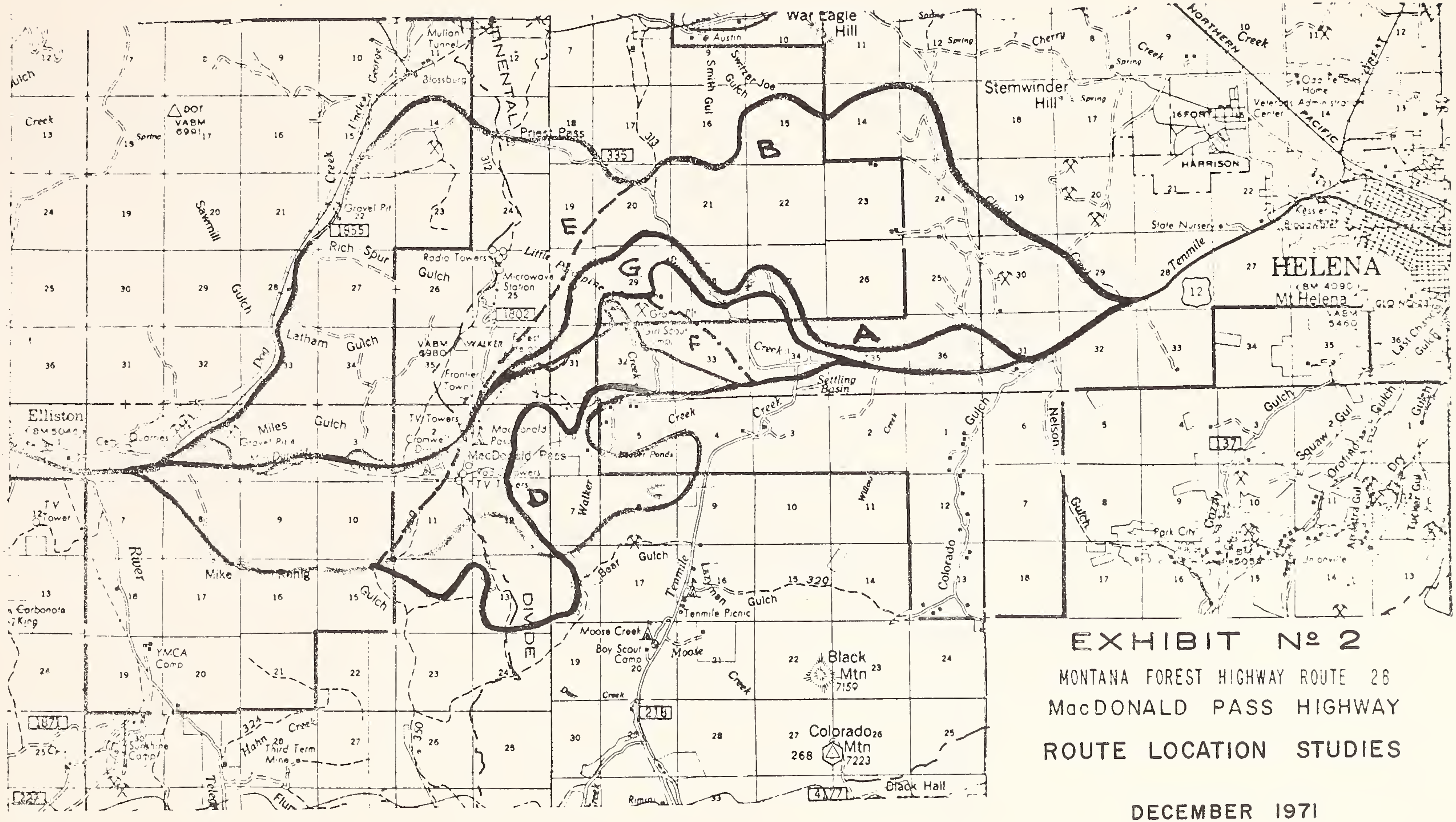


EXHIBIT Nº 2

MONTANA FOREST HIGHWAY ROUTE 28

MacDONALD PASS HIGHWAY

ROUTE LOCATION STUDIES

DECEMBER 1971

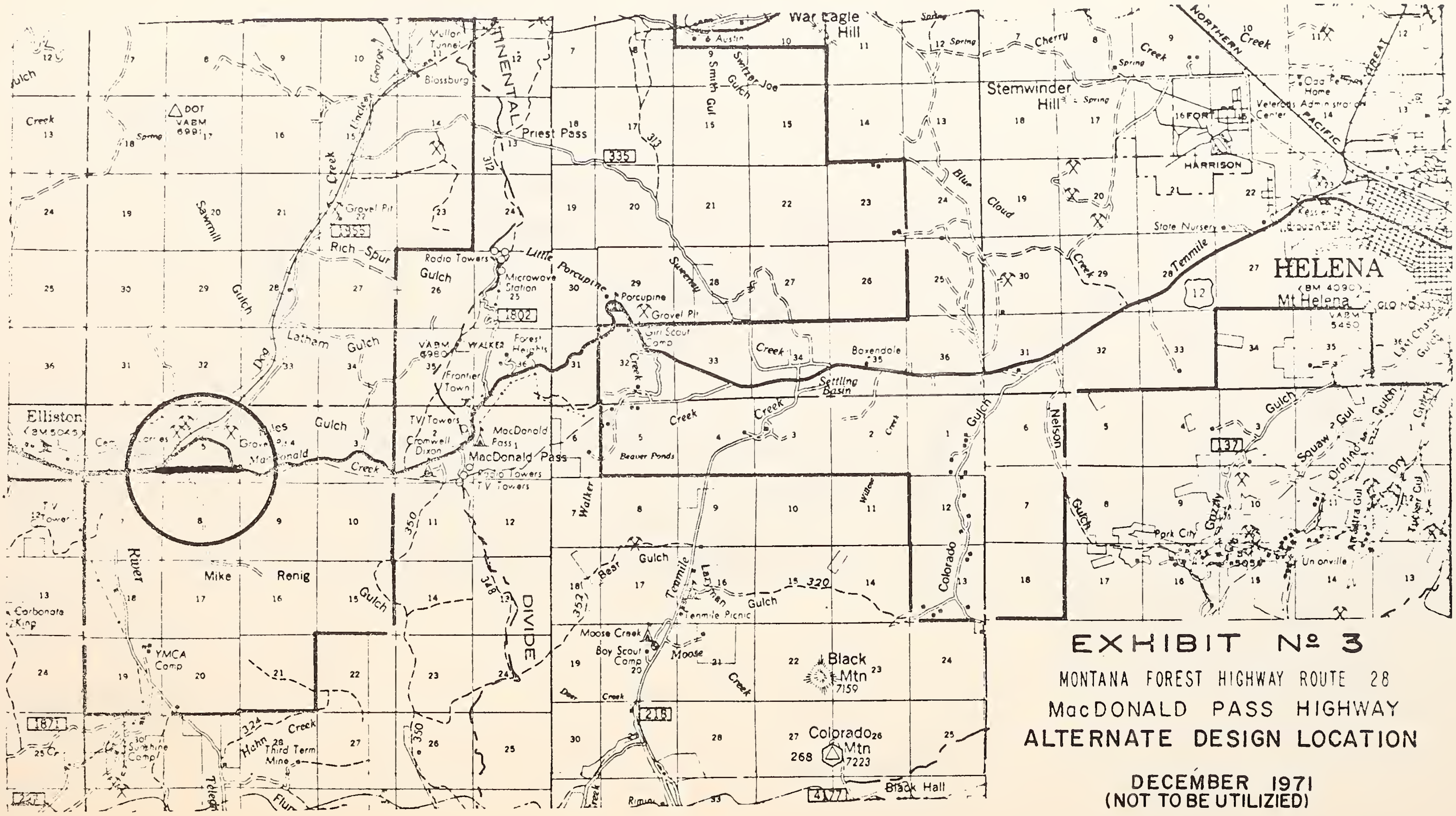


EXHIBIT No 3

MONTANA FOREST HIGHWAY ROUTE 28

MacDONALD PASS HIGHWAY

ALTERNATE DESIGN LOCATION

DECEMBER 1971
(NOT TO BE UTILIZIED)

SECTION 2

SUMMARY AND ANALYSIS OF VIEWS RECEIVED CONCERNING THE IMPROVEMENT

Summary and Analysis of Views Received Concerning the Improvement

The major design features of the project are quite acceptable to the public according to the response received at the formal public hearing. The comments on the proposed plans that were available for review before and after the hearing were also favorable.

There was some criticism of designing the facility without a median barrier. The State pointed out that the highway section was originally proposed as a two-lane facility with a truck-climbing lane. This proposal was compared with a minimum standard four-lane highway from an economic and safety standpoint. It was decided that the minimum four-lane facility gives the roadway user the maximum benefits for the money expended. Due to severe climate conditions on the pass during the winter it was determined that a median barrier would be a detriment to the proper maintenance of the highway.

The question of providing truck escape ramps was raised since the grades on the route are steep and the alignment is quite curvilinear. There is one location on the project that lends itself to a truck escape facility and it was studied in detail to determine if it should be constructed. Consideration was given to the amount of truck traffic, the relative increase in safety, and the relationship of the truck escape ramp with the total grade. It was mutually agreed to postpone the construction of a truck escape route at this location indefinately.

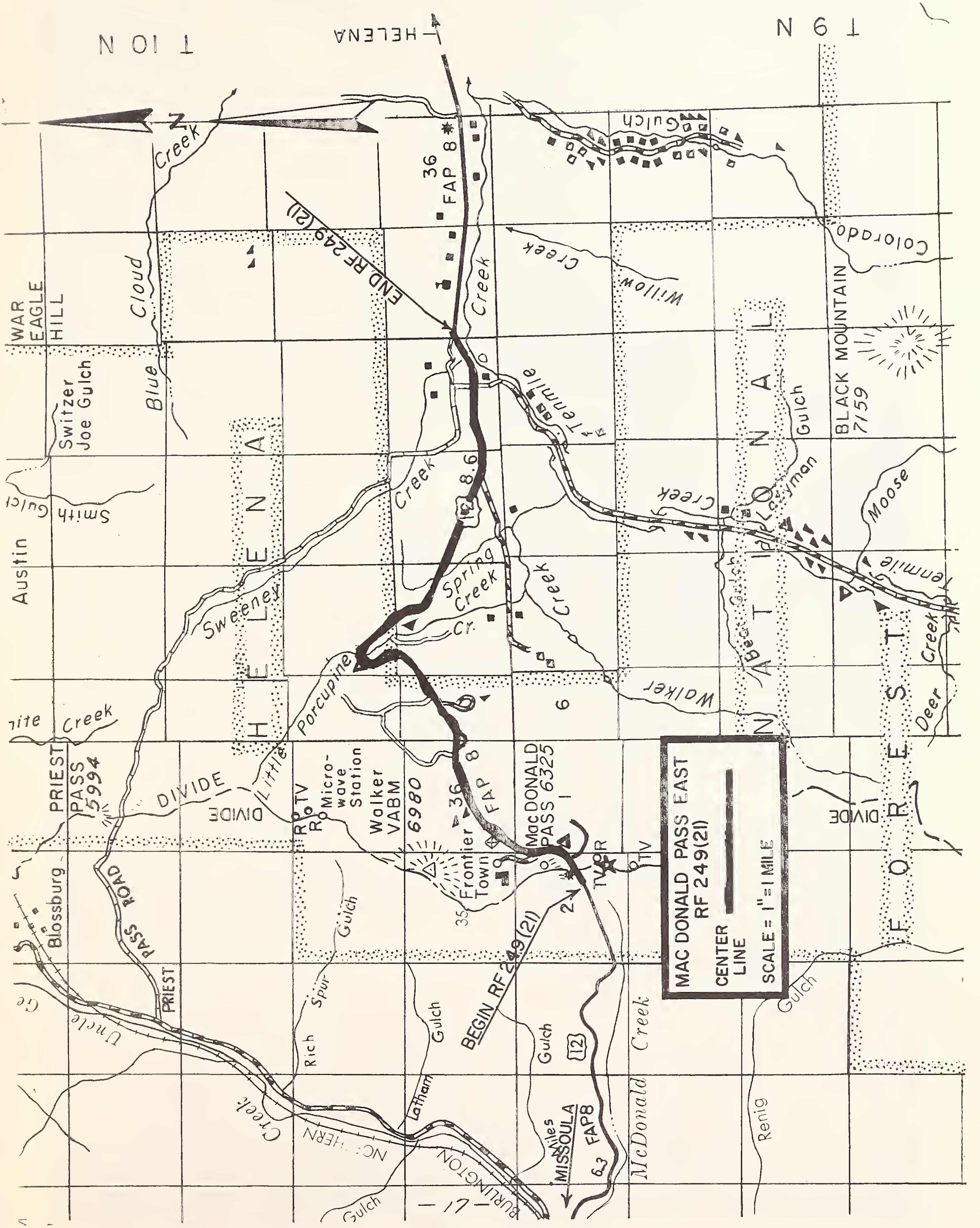
The Helena Chamber of Commerce asked if traffic would be maintained through the project at all times or would the road be closed to through traffic during the construction. The Chamber was assured that traffic would be allowed through the project with only minimum traffic delays. A traffic control plan has been developed that will permit the road user to travel on oiled surfaced roads at all times thus insuring his safety and comfort with a minimum amount of inconvenience.

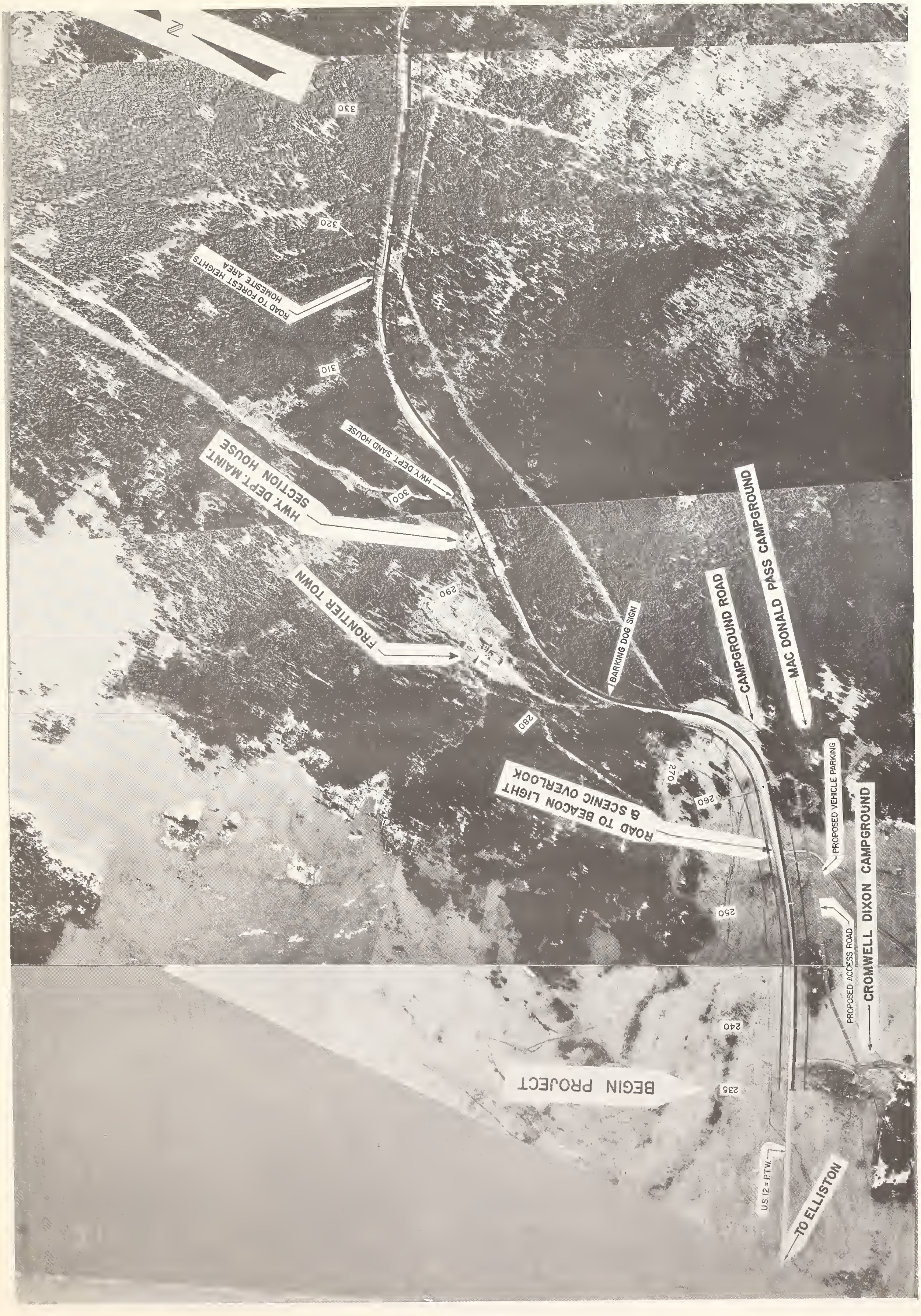
The Bureau of Outdoor Recreation submitted a letter attached to the transcript of the hearing concerning a possible 4(f) determination involving the Continental Divide Trail. The Montana State Highway Commission responded to the letter for both their section and the Forest Highway section on the route. (See Section 9 for copy of letter).

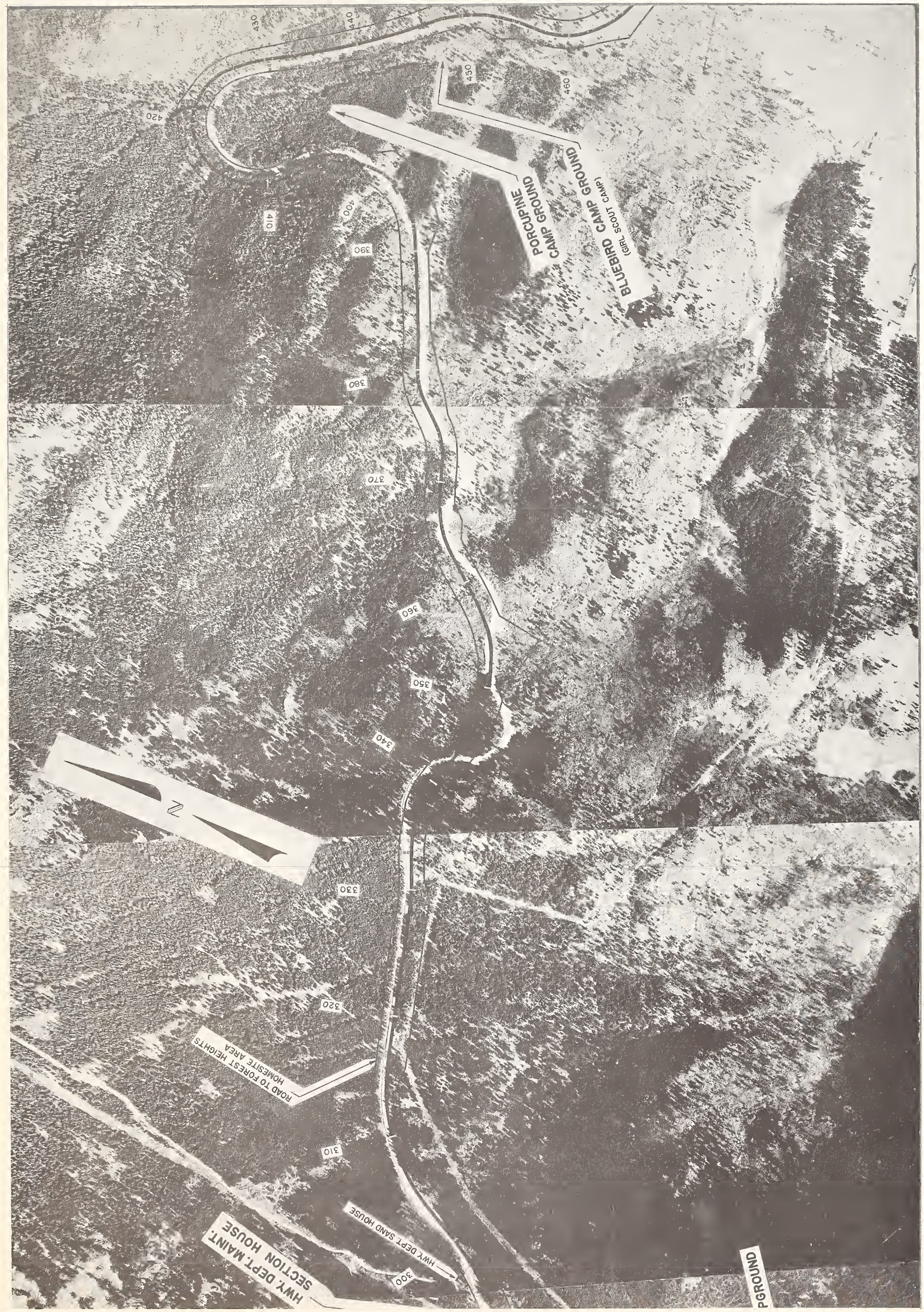
The Forest Service has concurred in the preparation of the Negative Declaration for this project, therefore no 4(f) type lands are involved within the limits of this project. (See Section 7 for confirmation).

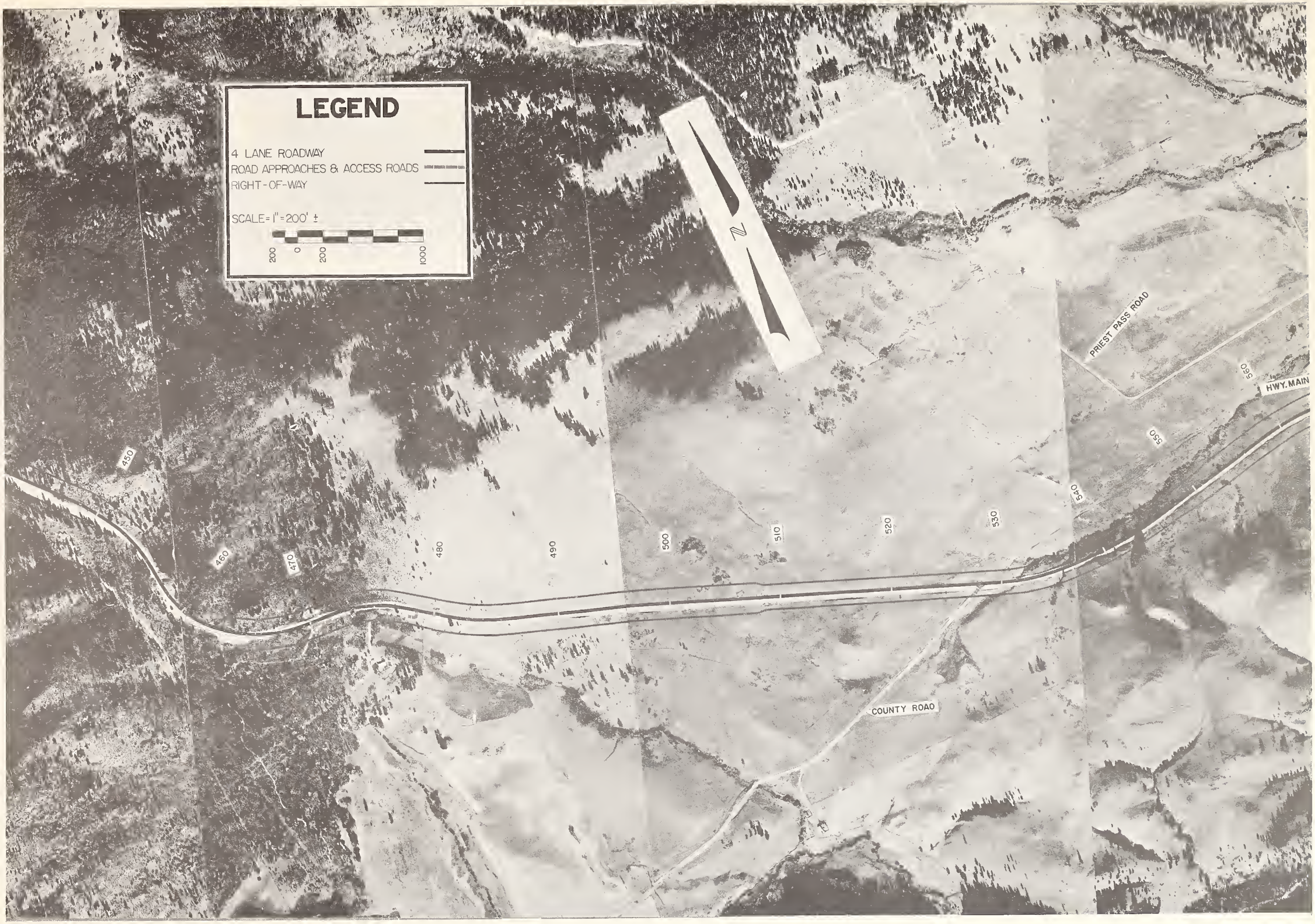
SECTION 3

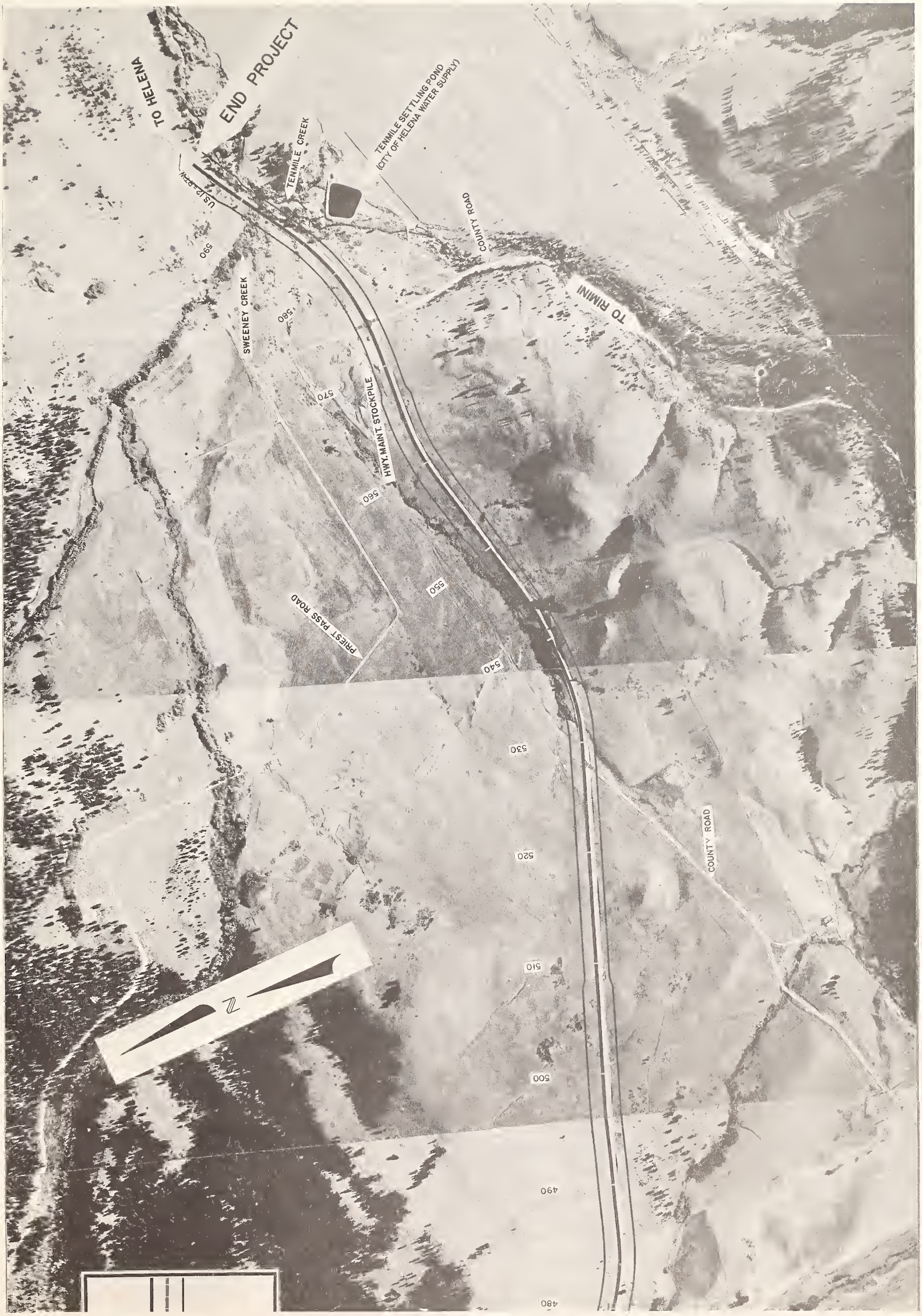
MAP
PHOTOGRAPHS


MAC DONALD PASS EAST
RF 249(21)
CENTER LINE
SCALE = 1" = 1 MILE
T 10 N
T 9 N
N
HELENA
END RF 249(21)
BEGIN RF 249(21)
MISSOULA FAP 8
Miles
6.3
36 FAP 8
FAP 8
12
8.6
2
35
36
6
1
MAC DONALD PASS 6325
Walker VABM 6980
Micro-wave Station
Frontier Town
TV
R
PRIEST PASS 5994
PRIEST PASS ROAD
DIVIDE
WAR EAGLE HILL
Austin
Blossburg
BLACK MOUNTAIN 7159
HELENA
NATIONAL
FOREST
Cloud Creek
Blue Cloud
Switzer
Joe Gulch
Smith Gulch
Sweeney Creek
Little Porcupine
Spring Creek
Cr.
Creek
Creek
Tenmile
Tenmile
Tenmile Creek
Willow Creek
Colorado Gulch
Walker Creek
Moose
Deer Creek
Lazyman Gulch
Abeet Gulch
Gulch
Rich Spur Gulch
Latham Gulch
Gulch
McDonald Creek
Renig Gulch
Uncle George Creek
Gulch
NORTHERN
BURLINGTON
ite Creek


N
330
320
ROAD TO FOREST HEIGHTS HOMESITE AREA
310
HWY. DEPT. SAND HOUSE
300
HWY. DEPT. MAINT. SECTION HOUSE
290
FRONTIER TOWN
BARKING DOG SIGN
CAMPGROUND ROAD
MAC DONALD PASS CAMPGROUND
280
270
260
ROAD TO BEACON LIGHT & SCENIC OVERLOOK
PROPOSED VEHICLE PARKING
CROMWELL DIXON CAMPGROUND
PROPOSED ACCESS ROAD
250
240
235
BEGIN PROJECT
US 12 - P.T.W.
TO ELLISTON


HWY. DEPT. MAINT. SECTION HOUSE
HWY DEPT SAND HOUSE
300
PGROUND
310
ROAD TO FOREST HEIGHTS HOMESITE AREA
320
330
N
340
350
360
370
380
390
400
410
420
430
440
450
460
PORCUPINE CAMP GROUND
BLUEBIRD CAMP GROUND
(GIRL SCOUT CAMP)

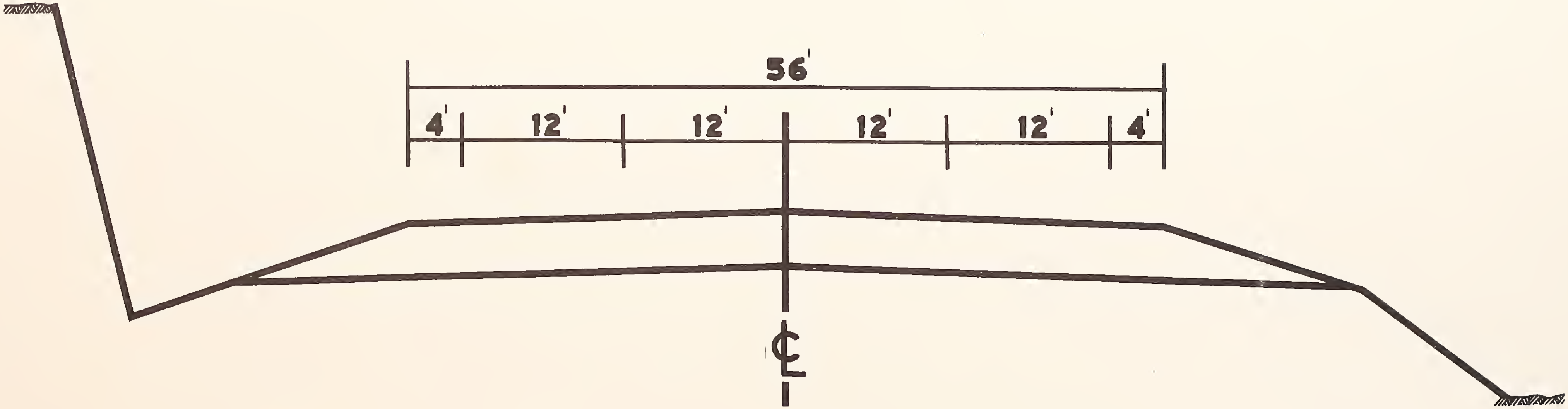

LEGEND
4 LANE ROADWAY
ROAD APPROACHES & ACCESS ROADS
RIGHT-OF-WAY
SCALE= 1" = 200' ±
200
0
200
1000
N
450
460
470
480
490
500
510
520
530
540
550
560
PRIEST PASS ROAD
HWY. MAIN
COUNTY ROAD


TO HELENA
END PROJECT
US 12-RTN
TENMILE CREEK
TENMILE SETTLING POND
(CITY OF HELENA WATER SUPPLY)
COUNTY ROAD
TO RIMINI
590
SWEENEY CREEK
580
570
HWY. MAINT. STOCKPILE
560
550
PRIEST PASS ROAD
540
530
520
COUNTY ROAD
510
N
500
490
480

SECTION 4

TYPICAL SECTION
TYPICAL SECTION SUPPORTING DATA

TYPICAL SECTION



Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

TO : State Highway Commission
Helena, Montana 07-JRB

DATE: June 14, 1971

In reply refer to: 08-24.2 DA2

JUN 15 1971
MONTANA

FROM : H. N. Stewart, Division Engineer
Helena, Montana

SUBJECT: MacDonald Pass - East

Reference is made to your April 27, 1971, and May 21, 1971, letters which requested our concurrence in your proposal to use a four-lane typical section on the subject project.

It is noted that, due to traffic and alignment conditions, a climbing lane is easily justified under the criteria set forth in the AASHO Bluebook. Although the adverse effect of trucks on the capacity of long, steep downgrades is not covered in the AASHO Bluebook, the problem appears obvious and is recognized in the 1965 Highway Capacity Manual. The combination of the capacity restrictions resulting from trucks descending the steep, long grades in a low gear and the reasons listed in your letter will justify the four-lane facility. We therefore concur with your proposal to design and construct four lanes from MacDonald Pass easterly.

The design study report on the FHP 28-1(1) project has been recently submitted for your review and comment. Your response of June 2, 1971, suggested four lanes be constructed on that project. We concur in your suggestion and have recommended four-lane design and construction from MacDonald Pass westerly.

As the matter now stands, our Federal Highway Projects Office position on the environmental statement and public hearing is as indicated in Mr. Mors' May 12, 1971, memorandum to Mr. Rahm, a copy of which you were furnished by Mr. Mors. We have requested that they furnish us with their target date for the public hearing so that a decision on holding a joint public hearing can be made.

RETURN TO [illegible]
[illegible]
STATE HWY. [illegible]
CHIEF COUNSEL
ASST. S.H.E. - ADM.
ACCOUNTING
PLANNING SURVEY
ASST. S.H.E. - ENGR.
BRIDGE
PRECONSTRUCTION
RIGHT OF WAY
ASST. S.H.E. - OPER.
CONSTRUCTION
MAINTENANCE
MATERIALS
OTHER
Inl

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

May 21, 1971

IN REPLY REFER TO:

Subject: FHP 28-1 (1)
MacDonald Pass-West
F 249 (21)
MacDonald Pass-East

U. S. Department of Transportation
Federal Highway Administration
11th & Fee Sts.
Helena, Montana 59601

Attention: Harold Stewart

Gentlemen:

On April 23, 1971 you called me regarding the number of lanes to be provided on the subject projects.

As I recall, the situation, we both felt that four lanes should be provided. However, you felt that we should make a formal request in writing so that you could furnish your concurrence in writing.

My letter of April 27, 1971 to you proposed four lanes for both of the subject projects and outlined our reasons for the proposal.

To date, we have not received your reply; thus I would appreciate any information available as to your current thinking on this matter. Thank you.

Very truly yours,

LEWIS M. CHITTIM, P. E.
State Highway Engineer

By:
Jack R. Beckert, P. E., Assistant State
Highway Engineer - Engineering

JRB/be

cc: Grover Powers

JOSEPH M. NASS, CHAIRMAN
POPLAR

JOHN J. LEARY, VICE CHAIRMAN, KALISPELL
G. R. COONEY, BUTTE
WILLIAM M. KESSNER, BLACK EAGLE
H. S. HANSON, BILLINGS
JOHN D. WHEELER, SECRETARY, HELENA

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

April 27, 1971

IN REPLY REFER TO:

Subject: FHP 28-1 (1)
MacDonald Pass-West
F 249 (21)
MacDonald Pass-East

U. S. Department of Transportation
Federal Highway Administration
11th & Fee Streets
Helena, Montana 59601

Attention: Harold Stewart

Gentlemen:

This is to confirm our discussion of April 23, 1971 regarding the number of lanes to be provided on the subject projects.

We definitely feel that four lanes should be provided on the subject projects for the following reasons:

1. The increase in cost for a four lane with a 56 foot top compared to a three lane with a 50 foot top will be nominal.
2. A four lane facility will undoubtedly be safer than a three lane facility.
3. Many drivers would attempt to use a three lane facility like a four lane, thus increasing the hazard.
4. The public would no doubt be very critical of us if we publicly proposed constructing a three lane facility.

(continued on page 2)

JOSEPH M. NASH, CHAIRMAN
POPLAR

OHN J. LEARY, VICE CHAIRMAN
KALISPELL

G. R. COONEY
BUTTE

WILLIAM M. KESSNER
BLACK EAGLE

H. S. HANSON
BILLINGS

JOHN D. WHEELER, SECRETARY
HELENA

5. There would be little, if any, more passing opportunities for downhill vehicles on a three lane than there are on the present highway; thus we would be adding capacity for uphill traffic but not for downhill traffic.

Your concurrence in our proposal for four lanes for both of these projects will be appreciated.

Very truly yours,

LEWIS M. CHITTIM, P. E.
State Highway Engineer

By:
Jack R. Beckert, P. E., Assistant State
Highway Engineer - Engineering

JRB/be

cc: Grover Powers

Date Recd. Preconst. 4-28-71

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP [illegible]		
		30 Field Design		
		30 Stan. [illegible] Design		
		31 [illegible]		
	✓	32 West Region		
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		36 Traffic		
		37 P[illegible]		
		38 S[illegible]		
		39 Consultant Design		
	✓	File		

1-15-71
SCK

MacDonald Pass East ~ 6.8 miles ~ 4 Lane ~ 56' top

Clear & Grab	L.S.	$100,000
Grading	975,000 C.Y. @ $1.40	1,365,000
Drainage	6.8 mi. @ $40,000	272,000
Surfacing	6.8 mi. @ $112,000	761,600
Guardrail	20,000 ft @ $5	100,000
Bituminous Curb	10,000 ft @ $1	10,000
Topsoil	5 miles @ $5,000	25,000
Seed & mulch	6 miles @ $3,000	18,000
Fencing	4200 rolls @ $6	25,200
Sign & stripe	6.8 miles @ $2,000	13,600
Subtotal		$2,690,400
+ 10% engineering & contingencies		269,040
		$2,959,440

say $3,000,000

1-15-91
SCK

MacDonald Pass East ~ 6.8 miles ~ 3 Lane ~ 50' top

Clear & Grub	L.S.	$100,000
Grading	950,000 @ $1.40	1,330,000
Drainage	6.8 mi. @ $35,000	238,000
Surfacing	6.8 mi. @ $100,000	680,000
Guardrail	20,000 ft. @ $5	100,000
Bituminous Curb	10,000 ft @ $1	10,000
Topsoil	5 miles @ $5,000	25,000
Seed & mulch	6 miles @ $3,000	18,000
Fencing	4200 rods @ $6	25,200
Signs & striping	6.8 miles @ $2,000	13,600
Subtotal		$2,539,800
+10% engineering & contingencies		253980
		$2,793,780

say $2,800,000

Program —

3,150,000

3 LANE DESIGN

MONTANA STATE HIGHWAY COMMISSION

FEDERAL AID PROJECT NO. F299(21)

ROAD PLANS SECTION

MAC. DONALD PASS EAST ROAD

IN LEWIS & CLARK COUNTY, MONTANA.

PRELIMINARY ESTIMATE 6.531 MILES

PRELIMINARY ESTIMATE DATED

ITEM NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICES		AMOUNT		
				DOLLARS	CENTS	DOLLARS		CENTS
	910,000	CU. YD.	EXCAVATION UNCL.	1	250	1137	500	00
	986,685	CU. YD.	COMPACTION: ROADBED	0	068	67	094	58
	1124	UNIT	ROLLING SURFACE COURSES	10	770	12	105	48
	5295	M. GAL.	WATER SURFACE COURSES	2	338	12	379	71
	59,174	TON	BASE COURSES	1	075	63	612	05
	130,831	TON	BASE COURSES	0	787	102	964	00
	21794	TON	TOP SURF.	1	440	31	383	36
	44036	TON	PLANT MIX BIT. SURF.	4	029	177	421	04
	2861.9	TON	PLANT MIX OIL	28	943	82	831	97
	261.9	TON	PRIME OIL	43	238	11	324	03
	20576.6	GAL.	TACK OIL	0	186	3	827	25
	20,000	LIN. FT.	GUARD RAIL - METAL	4	648	92	960	00
	6.531	MI.	PIPE 84"φ UNDER AT $35,000 PER. MI.			228	585	00
	88	LIN. FT.	54" S.S.R.P.C. DR. CULV.	79	00	6	952	00
						2030	940	47

4 LANE DESIGN SR

MONTANA STATE HIGHWAY COMMISSION

FEDERAL AID PROJECT NO. F 249(6)

ROAD PLANS SECTION

MAC. DONALD PASS EAST ROAD

IN LEWIS & CLARK COUNTY, MONTANA.

PRELIMINARY ESTIMATE 6.531 MILES

PRELIMINARY ESTIMATE DATED

ITEM NO.	QUANTITY	UNIT	DESCRIPTION	UNIT PRICES		AMOUNT		
				DOLLARS	CENTS	DOLLARS		CENTS
	929000	CU.YD.	EXCAVATION UNCL.	1	250	1161	250	00
	912415	CU YD.	COMPACTION ROADBED	0	068	62	044	22
	1259	UNIT	ROLLING SURFACE COURSES	10	770	13	559	43
	5923	M.GAL.	WATER SURFACE COURSES	2	338	13	847	97
	66691	TON	BASE COURSE	1	075	71	692	83
	145487	TON	BASE COURSE	0	787	114	498	27
	24759	TON	TOP SURF.	1	440	35	652	96
	52553	TON	PLANT MIX BIT. SURF.	4	029	211	736	04
	3413.8	TON	PLANT MIX OIL	28	943	98	805	61
	296.5	TON	PRIME OIL	43	238	12	820	07
	23373.1	GAL.	TACK OIL	0	186	4	347	40
	20000	LIN.FT.	GUARD RAIL ~ METAL	4	648	92	960	00
	6.531	MI.	PIPE 84" + UNDER AT $40,000 PER MI.			261	240	00
	96	LIN.FT.	84" S.S.P.P.C. DR. CULV.	79	000	7	584	00
						2162	038	80

FORM FHWA-121 (12-67)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

DEC 23 1970
HELENA, MONTANA

TO State Highway Commission
Helena, Montana
32-SCK

DATE: December 22, 1970

In reply refer to: 08-24 EC

FROM H. N. Stewart
Division Engineer
Helena, Montana

By: E. B. Erickson
District Engineer

SUBJECT: F 249(21), MacDonald Pass-East

Your December 8, 1970 letter asks essentially that we clarify our position on selection of the typical section to be used on MacDonald Pass.

At this writing we have no concrete information which supports a four-lane proposal. We have only general information combined with our knowledge of operation and terrain which supports a three-lane section. We know, for example, that the geometrics necessary to stay within a reasonable cost will result in considerable restriction of passing sight distance. The grade is 6 percent for approximately six miles and the predicted 1988 traffic is 2,550 ADT containing 15 percent trucks. We know from having driven the route many times in the past, having analyzed existing less severe conditions, and from viewing the tentative geometrics presented previously, that a truck climbing lane is warranted. We therefore has no hesitation in approving the preliminary engineering program which provided for three lanes.

We think that a four-lane section with four-foot shoulders which provides a downhill as well as an uphill truck lane has considerable merit. We do not know, however, what the total cost in dollars or what disadvantages might exist, nor are we sure that we have considered all of the advantages. We need more facts and other opinions before we are willing to authorize Federal funds for further four-lane development. We would therefore appreciate your analysis of the roadway section you would propose.

We have not yet received the cost comparison between three and four lanes for the western side of the pass. We understand that this will be prepared by our Vancouver Office sometime after the first of the coming year, depending upon receipt of usable information from the recent aerial survey. We are not sure that this information, when received, will be truly comparable to that which might be obtained for the east side because of terrain differences.

	RETURN TO M	HWY. DE	STATE HWY. E	CHIEF C	ASST. S. H. E. FOR	ACCOUNTING	PLANNING	ASST. S. H. E. ENG.	BRIDGE	CONSTRUCTION	RIGHT OF WAY	ASST. S. H. E. OPER.	CONSTRUCTION	MAINTENANCE	MATERIALS	OTHER
1st			✓					3		2						
2nd																

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Capacity Analysis of MacDonald Pass - East

Basic Information

Traffic Volume;

1968 ADT = 1031
1988 ADT = 2550
1994 ADT = 3000
DHV = 3000 (0.15) = 450
% Trucks = 15%

Physical Characteristics;

Grade = 6% (Average)
Grade length = 6 miles
Max. D_c = 10°

Design Speed = 50 mph
Average Running Speed = 40-45 MPH

Capacity of a 2-lane facility:

From AASHO Blue Book table II-9.

Design speed = 50mph
Mountainous terrain
60% sight distance restriction
Lane width = 12 feet
% trucks = 15%

So DHV = 275 < 450 so 2-lane is not adequate

Check to see if grade warrents passing lane:

From AASHO Blue Book pg 268.

$$\text{Design Capacity} = \frac{100 \times \text{capacity without trucks}}{100 + T(j-1)}$$

where cap. no trucks = 620
T = 15%
j = 40.5 (From Tables V-4 & V-3)

$$\text{Design Capacity} = \frac{100 \times 620}{100 + 15(40.5-1)} = 90$$

From AASHO Blue Book pg. 269

If the DHV is greater than 120 percent of the design capacity a climbing lane should be added

$90 \times 1.20 = 108 < 450$ ∴ a climbing lane is warranted

Capacity of a 4-lane facility!

From AASHO Blue Book pg 108

Lane width = 12 feet
% trucks = 15%
Major highway, rolling terrain

DHV $560 \times 4 = 2240 > 450$ so 4-lane is adequate

Since this value (2240) is based on rolling terrain, and the Blue Book gives no value for mountainous terrain, check the Capacity Manual for a value which gives more weight to the grades involved.

C — 3000

AHS = 60 $V/C = 0.50$

$SV_C = 2000\,N\,(V/C)\,w\,T_L$

$= 2000\,(2)(.50)(1.00)(0.26) = 520$

$DHV = 2 \times 520 = 1040$

$C = 2000\,N\,w\,T_C$

$= 2000\,(2)(1.00)(0.26) = 1040$

$DHV = 2080$ → Not much different

1994 ADT = 3000
" DHV = 450

$T_c = 0.085$ Check II 8 - II 10 - 410
$W_c = 1.0$

$C = 2000 \times 1.0 \times 0.085 = 170$ vph

$$C = \frac{100 \times \text{Cap w/ no } T}{100 + T(j-1)}$$ T = 15
j = 40.5

1/6 $$= \frac{100 \times \_\_\_\_}{100 + 15(40.5 - 1)} = \frac{100 \times 930}{\cancel{592.5}\ 692.5} = 155 < 450$$

Indicates climbing lane is required.

Say $T_c = .20$
$C = 2000\, N W T_c$
$C = 2000 \times 2 \times 1.0 \times 0.2 = 800$ vph

Pg. 110 BB

P = 1000
T = 15
J = 40.5
N = 4
K = 15
D = 55

$$ADT = \frac{100P}{100 + T(J-1)} \times \frac{5000N}{KD}$$

$$= \frac{100(1000)}{100 + 15(40.5-1)} \times \frac{5000 \times 4}{15 \times 55}$$

$$= \frac{10\cancel{00}}{7\cancel{00}} \times \frac{200}{8.25} = \frac{2000}{7 \times 8.25} = 40$$?

249 – 266
264 – 282
287 – 313
339 – 354
382 – 426
438 – 484
~~564 – 579~~

No 282 - 287 500
313 - 339 2600
354 - 382 2800
426 - 438 1200
~~6600~~
484 - 595 11100
17600

580
249
33100

2
~~66~~
331 .2%
10

250 - 595

$\frac{176}{345} =$ 80%

60%

580
260 - 580
320

528
.6
3168

32-SCK

December 10, 1970

F 249 (21)
MacDonald Pass
East
08-24.2 DA2

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

This is to acknowledge receipt of your letter of December 8, 1970 regarding the subject project.

That letter implies that you do not agree with our proposed four lane design.

As you know, we propose four twelve foot lanes and two four foot shoulders for a total width of 56 feet.

It is not clear in your letter whether you feel our proposed section is too wide or too narrow.

We will appreciate your clarifying your position on the typical section to be used so that we will not be delayed in the design of the subject project and you will not be delayed in the design of the adjoining Forest Highway Project.

32-SCK:sp

cc: J.R. Beckert
R.B. Dundas
S.C. Kologi

Very truly yours,

LEWIS M. CHITTIM, P.E.,
State Highway Engineer

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

SECTION 5

CORRIDOR AND DESIGN PUBLIC HEARING NOTICE

TRANSCRIPT OF COMBINED CORRIDOR AND DESIGNED PUBLIC HEARING

REPORTS AND APPROVALS OF CORRIDOR AND DESIGN PUBLIC HEARING

NOTICE OF A COMBINED CORRIDOR AND HIGHWAY DESIGN PUBLIC HEARING

NOTICE IS HEREBY GIVEN THAT, in accordance with Section 116 of the FEDERAL AID HIGHWAY ACT OF 1956, and Policy and Procedure Memorandum 20-8 issued January 14, 1969 by the U.S. Department of Transportation, a Combined Corridor and Highway Design Public Hearing will be held in the Auditorium of the Montana Highway Commission Building in Helena, Montana on Thursday, October 14, 1971 at the hour of 7:30 p.m., relating to the proposed location and major design features of a proposed highway construction project on U.S. Highway No. 12 in Lewis and Clark and Powell Counties. This proposed location and design will begin at a point approximately 1.7 miles east of the community of Elliston, Montana and extends 10.5 miles easterly along U.S. Highway No. 12 over Mac Donald Pass to a point near the Rimini Road Intersection with U.S. Highway No. 12 west of Helena, Montana. The first 3.8 miles of the project is a Forest Highway Project and is the responsibility of the Federal Highway Administration, while the remaining 6.7 miles is being designed by the Montana State Highway Commission. The entire project will consist of a new four-lane two-way roadway generally following the existing highway, with adequate drainage facilities provided throughout.

Maps, drawings and other pertinent information relating to this project will be available for public inspection and copying at the Montana Highway Commission Offices in Butte or Helena, Montana and the Federal Highway Administration Office in Helena, Montana. The tentative schedule for right of way acquisition and construction, as well as relocation assistance programs, will be discussed.

INVITATION IS HEREBY EXTENDED TO ALL INTERESTED PERSONS in the subject matter of this notice to attend said hearing and to submit written briefs or verbal arguments either for or against the proposition. Written statements will also be accepted for ten (10) days following the hearing by the Montana Highway Commission, Helena, Montana.

Dated this 13th day of September 1971
Projects: FHP 28-1 (1), FHP 28-1 (2)
and RF 249 (21)

LEWIS M. CHITTIM, P.E.
State Highway Engineer

Helena, Montana 59601

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

Silver State Post
Deer Lodge, Montana 59722

Gentlemen:

Please publish in your issues of Friday, September 17, 1971 and Friday, October 8, 1971 the enclosed legal Notice of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass west of Helena, Montana.

A news release covering this subject is forthcoming from our Public Information Office in Helena, Montana. Further information concerning the project may be obtained from Mr. R. B. Dundas, our District Engineer at Butte, Montana, Mr. G. O. Powers, our Preconstruction Engineer at Helena, Montana and Mr. H. N. Stewart, Division Engineer for the Federal Highway Administration at 501 North Fee, Helena, Montana.

Enclosed are three copies of a Certification of Publication which must accompany your statement in triplicate for the cost of this service. The first folio is 100 words at $2.25 per folio; second publication is called an insertion and is $1.25 per folio.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

The Independent Record
317 Allen
Helena, Montana 59601

Gentlemen:

Please publish in your next issue and your issue of Friday, October 8, 1971 the enclosed legal Notice of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass west of Helena, Montana.

A news release covering this subject is forthcoming from our Public Information Office in Helena, Montana. Further information concerning the project may be obtained from Mr. R. B. Dundas, our District Engineer at Butte, Montana, Mr. G. O. Powers, our Preconstruction Engineer at Helena, Montana and Mr. H. N. Stewart, Division Engineer for the Federal Highway Administration at 501 North Fee, Helena, Montana.

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Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc
Enclosures

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

United States Department of Agriculture
Forest Service
Mr. Neil M. Rahn, Regional Forester
Federal Building
Missoula, Montana 59801

Dear Mr. Rahn:

Enclosed are two Notices of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass, west of Helena, Montana.

Legal notice of this hearing will be published in the Independent Record, Helena, Montana and the Silver State Post, Deer Lodge, Montana and these newspapers will be furnished a news release pertaining to this hearing.

Your attention is called to this notice as our records indicate that you have an interest in this area.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

JOSEPH M. NASS, CHAIRMAN
POPLAR
[illegible] J. LEARY [illegible] G. R. [illegible] WILLIAM [illegible] H. S. HANSON JOHN D. WHEELER

FOREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

Helena National Forest
616 Helena Avenue
Helena, Montana 59601

Gentlemen:

Enclosed are two Notices of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass, west of Helena, Montana.

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Your attention is called to this notice as our records indicate that you have an interest in this area.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

JOSEPH M. NASS, CHAIRMAN
POPLAR
JOHN J. LEARY, VICE CHAIRMAN   G. R. [illegible]   WILLIAM M. [illegible]   H. S. HANSON   JOHN D. WHEELER, SECRETARY

FORRREST H. [illegible]
[illegible]

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

Chamber of Commerce
City Hall
Powell County
Deer Lodge, Montana 59722

Gentlemen:

Enclosed are two Notices of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass, west of Helena, Montana.

Legal notice of this hearing will be published in the Independent Record, Helena, Montana and the Silver State Post, Deer Lodge, Montana and these newspapers will be furnished a news release pertaining to this hearing.

Your cooperation in bringing this matter to the attention of any interested persons is requested.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

JOSEPH M. NASE CHAIRMAN
POPLAR
JOHN J. LEARY [illegible] G. R. COONEY WILLIAM [illegible] [illegible] S. HANSON JOHN D. WHEELER [illegible]

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

Chamber of Commerce
201 East Lyndale
Lewis and Clark County
Helena, Montana 59601

Gentlemen:

Enclosed are two Notices of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass, west of Helena, Montana.

Legal notice of this hearing will be published in the Independent Record, Helena, Montana and the Silver State Post, Deer Lodge, Montana and these newspapers will be furnished a news release pertaining to this hearing.

Your cooperation in bringing this matter to the attention of any interested persons is requested.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

JOSEPH M. NASS, CHAIRMAN
POPLAR
JOHN J. LEARY
G. R. COONEY
WILLIAM M.
H. S. HANSON
JOHN D. WHEELER

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

September 13, 1971

Helena, Montana

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

United States Postmaster
Elliston, Montana 59728

Dear Sir:

Enclosed are two Notices of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass, west of Helena, Montana.

Legal notice of this hearing will be published in the Independent Record, Helena, Montana and the Silver State Post, Deer Lodge, Montana and these newspapers will be furnished a news release pertaining to this hearing.

We would appreciate it if you would post this notice on your bulletin board in order that it might be brought to the attention of interested persons.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

JOSEPH M. NASS, CHAIRMAN
POPLAR
R. E. COFFEY
JOHN J. LEARY, VICE CHAIRMAN
G. P. COONEY
WILLIAM M. [illegible]SNER
S. HANSON
JOHN D. WHEELER

FORREST H. ANDERSON

MONTANA HIGHWAY COMMISSIO

Helena, Montana 59601

September 13, 1971

37 DDA

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

Board of County Commissioners
Lewis and Clark County
Helena, Montana 59601

Gentlemen:

Enclosed are three Notices of a Combined Corridor and Highway Design Public Hearing which will be held on Thursday, October 14, 1971 in connection with a proposed construction project on U.S. Highway No. 12 over MacDonald Pass, west of Helena, Montana.

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Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

GEORGE VUCANOVICH, CHAIRMAN
JOSEPH M. NASS
R.E. COFFEY
JOHN J. LEARY
G. R. COONEY
JOHN D. WHEELER

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

September 13, 1971

37 DDA
IN REPLY REFER TO:

FHP 28-1 (1) & (2)
MacDonald Pass-West

RF 249 (21)
MacDonald Pass-East

Board of County Commissioners
Powell County
Deer Lodge, Montana 59722

Gentlemen:

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Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By Donald D. Anderson
for Grover O. Powers, P.E.
Preconstruction Engineer

GOP:DDA:fc

Enclosures

GEORGE [illegible], CHAIRMAN
JOHN J. LEARY, VICE CHAIRMAN
G. R. COONEY
JOSEPH M. NASS
WILLIAM [illegible]
R E COFFEY
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JOHN D. WHEELER SECRETARY

TRANSCRIPT OF A COMBINED CORRIDOR AND HIGHWAY DESIGN PUBLIC HEARING RELATING TO THE PROPOSED LOCATION AND MAJOR DESIGN FEATURES OF A PROPOSED HIGHWAY CONSTRUCTION PROJECT ON U. S. HIGHWAY NO. 12 IN LEWIS AND CLARK AND POWELL COUNTIES

PROJECTS: FHP 28-1 (1), FHP 28-1 (2)
AND FR 249 (21)

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HELD IN THE AUDITORIUM OF THE MONTANA HIGHWAY COMMISSION BUILDING
HELENA, MONTANA
THURSDAY, OCTOBER 14, 1971 AT 7:30 P.M.

Transcript prepared by:

Preconstruction Division
Montana Highway Commission
November 8, 1971

NOTICE IS HEREBY GIVEN THAT, in accordance with Section 116 of the FEDERAL AID HIGHWAY ACT OF 1956, and Policy and Procedure Memorandum 20-8 issued January 14, 1969 by the U.S. Department of Transportation, a Combined Corridor and Highway Design Public Hearing will be held in the Auditorium of the Montana Highway Commission Building in Helena, Montana on Thursday, October 14, 1971 at the hour of 7:30 p.m., relating to the proposed location and major design features of a proposed highway construction project on U.S. Highway No. 12 in Lewis and Clark and Powell Counties. This proposed location and design will begin at a point approximately 1.7 miles east of the community of Elliston, Montana and extends 10.5 miles easterly along U.S. Highway No. 12 over Mac Donald Pass to a point near the Rimini Road Intersection with U.S. Highway No. 12 west of Helena, Montana. The first 3.8 miles of the project is a Forest Highway Project and is the responsibility of the Federal Highway Administration, while the remaining 6.7 miles is being designed by the Montana State Highway Commission. The entire project will consist of a new four-lane two-way roadway generally following the existing highway, with adequate drainage facilities provided throughout.

Maps, drawings and other pertinent information relating to this project will be available for public inspection and copying at the Montana Highway Commission Offices in Butte or Helena, Montana and the Federal Highway Administration Office in Helena, Montana. The tentative schedule for right of way acquisition and construction, as well as relocation assistance programs, will be discussed.

INVITATION IS HEREBY EXTENDED TO ALL INTERESTED PERSONS in the subject matter of this notice to attend said hearing and to submit written briefs or verbal arguments either for or against the proposition. Written statements will also be accepted for ten (10) days following the hearing by the Montana Highway Commission, Helena, Montana.

LEWIS M. CHITTIM, P.E.
State Highway Engineer

Dated this 13th day of September 1971
Projects: FHP 28-1 (1), FHP 28-1 (2)
and RF 249 (21)

The following is a transcript of a Combined Corridor and Highway Design Public Hearing held in the Montana Highway Commission Building in Helena, Montana on Thursday, October 14, 1971 at the hour of 7:30 p.m., relating to the proposed location and major design features of a proposed highway construction project on U.S. Highway No. 12 in Lewis and Clark and Powell Counties. This proposed location and design will begin at a point approximately 1.7 miles east of the community of Elliston, Montana and extends 10.5 miles easterly along U.S. Highway No. 12 over MacDonald Pass to a point near the Rimini Road Intersection with U.S. Highway No. 12 west of Helena, Montana. The first 3.8 miles of the project is a Forest Highway Project and is the responsibility of the Federal Highway Administration, while the remaining 6.7 miles is being designed by the Montana State Highway Department. The entire project will consist of a new four-lane, two-way roadway generally following the existing highway, with adequate drainage facilities provided throughout.

The hearing was attended by the following Montana Highway Commission personnel:

Jack Wheeler, Secretary of the Montana Highway Commission, Helena
Richard B. Dundas, District Engineer, Butte
James V. Keyes, District Right of Way Supervisor, Butte
Grover O. Powers, Preconstruction Engineer, Helena
Steve Kologi, Regional Engineer, Helena
Bob Samson, Special Assignments Engineer I, Helena
Don D. Anderson, Director of Public Hearings and Notices, Helena

Representing the Federal Highway Administration were:

Arthur R. Westby, Design Office, Federal Highway Projects Division, Vancouver, Washington
Darrel Lein, Design Office, Federal Highway Projects Division, Vancouver, Washington
Harold N. Stewart, Division Engineer, Helena
M. A. Mason, Area Engineer, Helena
Lyle Maus, Direct Federal Construction Supervisor, Helena

TRANSCRIPT

ANDERSON: Shall we begin the public hearing now? Take your seats, please. Good evening, ladies and gentlemen. On behalf of the Federal Highway Administration and your Montana State Highway Commission, I welcome you to the formal part of this public hearing this evening. We are here this evening to present to you a proposal for reconstruction of U.S. Highway No. 12 over MacDonald Pass. This is a unique project. We have two separate projects as far as design goes. The west side of the pass is a Forest Highway Project which is the sole responsibility of the Federal Highway

Administration, while the east side of the pass is being designed by your State Highway Department. We will shortly have a more detailed presentation. First of all, I would like to make a few introductions of some of the personnel that are with us this evening. First of all, from the Federal Highway Administration we have Mr. Ray Westby, Design Chief Engineer from Vancouver, Washington; Mr. Darrel Lein, Area Engineer from Vancouver, Washington; Mr. Harold Stewart, Division Engineer from Helena; Mr. Bill Mason, Area Engineer from Helena and Mr. Lyle Maus, Construction Engineer, also from Helena. From your State Highway Department we have Mr. R. B. Dundas, District Engineer from Butte; Mr. Jim Keyes, District Right of Way Supervisor from Butte; Mr. Grover Powers, Preconstruction Engineer, Helena; Mr. Steve Kologi, Regional Engineer from Helena. This is Bob Samson, Special Assignments Engineer and I am Don Anderson of the Preconstruction Division, both from Helena.

We will begin our presentation now. Would you please hold all of your questions until we have gone through the complete description of the project. We will have a representative from the Federal Highway Administration explain their project and proceed right straight through to the State Highway's project and then a short presentation from our right of way supervisor. With that, we will begin with the presentation. We will ask Mr. Ray Westby to begin his presentation at this time. Ray.

WESTBY: The portion of the highway that is under the jurisdiction of the Federal Highway Administration begins at a point here, which is approximately 1.9 miles east of Elliston which is right near the junction of the Mike Renig Road. We proceed easterly along the existing alignment practically all the way, improving both the vertical and horizontal curves to a maximum degree of six degree grade and a maximum of six degree horizontal curvature. Following right along the existing road until we get up here to the Forest Boundary and we're just off to the south of the existing road and the east end of the project is approximately 1500 feet west of the summit, in the vicinity of the Cromwell Dixon Campground, approximately 200 feet back. Now, going back on a little more detail here, we propose to construct approach roads to existing Mike Renig Road on both the left and the right at this point here. Here is a road that goes off to the Mullan Pass and back to the west to the Elliston Lime. There will be an approach road there. We go along . . . this is a farm approach up in the vicinity of Station 80 which replaces an existing one. In the vicinity of Station 85 on the left, in the vicinity of Station 90 on the right, approximately Station 126 on the left and then up here at Station 170 and again at about Station 178. Now, these two approaches here - this portion of the old highway we propose to leave and use it as a parking area for winter recreation parking. The remaining portion of the existing highway will be obliterated throughout. There is another approach on the right at Station

190 which provides access down to the . . . I believe it's the R. V. Ranch, then up at Station 210 there will be an approach to the left for the Forest Service. Down here in the vicinity of Station 45 to about Station 53, we will provide a chain-up area on the right, a de-chaining area on the left. The de-chaining area will also be used for anybody that is interested in reading that historic sign pertaining to Mullan Pass. Our typical section, which is shown up here, is very similar to the one the state has over there; a little larger to see. We will have a four-lane facility, two lanes to the east, two lanes to the west with four-foot shoulders. Our ditch line will be a minimum of 15 feet and that will vary up to 20 feet approximately from Station 170 on up. The cut slopes will be variable, depending upon the geological conditions. Our embankment slopes will be a minimum of two to one. The fencing, guardrail and so forth will be provided in accordance with the need. Generally speaking, I think the entire right of way would be fenced. I think that is about all I have to say about that. I'll check here and see if I have missed anything. The design of the highway will be in accordance with the Montana State Highway Standards and the American Association of State Highway Officials and will be designed to 50 mph. The right of way widths . . the yellow line here designates the right of way; the red one the centerline. The right of way widths will vary from approximately 250 feet to I think about 490 feet up in this area here. The exact width of that has not been determined at this time. We did have one alternate we studied for the design. It took off here-just west of our project here, and followed through here and tied on right in here in the vicinity of Station 100. However, due to high cuts and fills, we kind of threw that out before we got too far with it and we're back on the existing road as the most economical and, also, less damage to the environment. This entire 3.9 miles, as planned now, there's one project programmed for the current fiscal year and we would expect to start that in the vicinity of Station 160 and it would terminate up here at Station 235. We hope to have that under construction next summer sometime, depending upon whether or not we are able to get right of way. The other project from Station 41 up to the vicinity of Station 160 is tentatively programmed for the 1973 fiscal year. Federal laws require the highway agency responsible for the design of the roadway to make an evaluation of the impact of the highway construction on the quality of human environment. If the highway has a potential to significantly affect the human environment, then an environmental statement must be prepared containing an assessment of the anticipated beneficial and detrimental effects of the improvement. A negative declaration is written in support of the determination that should the proposed highway improvement be constructed, the anticipated effects of the human environment will not be significant. On this portion of the route we have considered that the effects would not be significant. We do not believe the quality of the human environment is significant and we

have prepared a negative declaration outlining our viewpoints and in summary, these viewpoints were: The proposed improvement calls for reconstruction of the highway and the existing corridor. Due to the much wider pavement width and approved alignment, the construction scar will be more prominent but the flatter slopes proposed can be better landscaped to blend into the surrounding terrain. Except for some long-term loss in the existing land-use for the highway needs, there shouldn't be any appreciable change in the environment. There will be no significant change in the social pattern or the economic opportunities in the area except for those features that can be directly attributed to faster, safer and more efficient transportation that would be provided by the improved facility. There is no significant impact on the natural, ecological, cultural or scenic resources of national, state or local importance. Now, we do have copies of the complete Negative Declaration and the documents will be made available on the table back there if anybody wishes to read them. I believe that about covers what I have to say. Generally, there are about 86 acres of right of way through private land here and approximately six acres through the Forest Service land. The State of Montana will acquire right of way through the private land and they will also acquire it through the forest land in accordance with the memorandum of understanding. I believe that is all I have on this section.

ANDERSON: Thank you, Mr. Westby. We will proceed now with Mr. Kologi's presentation.

KOLOGI: Thank you, Don. The project we are going to discuss now is a project that we call MacDonald Pass - East, but first just a word about the type of facility that we will build. It will be a four-lane highway but it will not be an Interstate. That is, we won't have the problems with the control of access and interchanges and getting on and getting off that we do with the Interstate. It will be a four-lane highway but with narrower shoulders than we have on the Interstate. If you can visualize the road over Helena Hill out here, it will have the four lanes like that; the grades will be about like that but it won't have quite as wide shoulders and it won't have the nice, wide median but otherwise it is a four-lane highway. The slopes and ditches will look much like our Interstate out on Helena Hill. The project we are talking about begins just a short distance west of the MacDonald Pass Summit, about a quarter of a mile west, and it proceeds easterly from there, following the existing highway on down past Frontier Town, still following the present highway past the Highway Maintenance House, still following the present highway past where the road turns off to the summer homes and then down below that, we are going to improve some of those bad curves in there. You can maybe see this white line here is the present highway; this red line is our proposed new highway and the orange narrow lines are the approximate right of way limits that will be required. As we go down the side of the hill we are in the general vicinity of the present highway but without the real bad curves, and when we get down towards Porcupine Creek we make the same loop that the present highway does but a bigger loop, so it won't be quite as sharp of curve. We continue following the present highway . . . these two boards overlap some; this point on this board is about this point on this board . . . the highway continues to follow the present road on down to just past the Rimini turnoff where the project will end. At the summit we will add one additional lane on each side for a short distance for the truckers to stop. You know how they like to park on the summit, and also, down just below the Rimini turnoff we will add a lane on each side for a short distance for a chain-up area and a chain-removal area. Regarding approaches, the Forest Service now has three approaches up on top of MacDonald Pass on the south side of the highway. We will combine those into one approach with short connecting roads like the road that goes over to Mike Renig into the head of it, and the campground roads and the roads up to the beacon and the scenic overlook will all come into the new highway on one place. There will be an approach at Frontier Town. There will be an approach by the Highway Maintenance House and there will be an approach for the homesite area. Then on down, just before we come to Porcupine Creek, there will be an approach on the left. Then right at Porcupine Creek we may have an approach and we may not. That summer home that was back in there - I guess it burned down this summer so there may not need to be an approach. There will be an approach into the Porcupine Campground and there will be an approach to the north in that same area where that road goes back in there. There will be an approach lower down where the road turns off to the Girl Scout Camp, and just a few hundred feet below that - I believe it's the Clausen driveway, there will be an approach there, and there will be an approach at the county road that goes up to the old Carson Ranch and there will be approaches on both sides at the Rimini Road. I really can't think of anything else here. We too analyzed our situation with regard to the environment and we have made a Negative Declaration. That is, we feel that this proposed project will not have a significant, adverse affect on the environment. We figure the effects were beneficial rather than harmful. I don't know if we have made everything clear here, just what we do propose, so if you have some questions, feel free to speak up and we will try to answer them for you.

ANDERSON: Thank you, Mr. Kologi. Before we open up for discussion, I would like to ask Mr. Keyes to give us a little presentation on right of way and relocation, if you would please, Jim.

KEYES: Ladies and gentlemen, from looking at this proposed project I don't foresee any serious right of way problems at this time.

It is not a controlled access highway, as was stated here. We won't have the problem of severance that we do on an Interstate highway. We could run into a little difficulty in fencing it up there on the private land where there is no fencing now. It seems as though that when we upgrade an existing highway or we construct a new one that the question of stockpasses comes up quite frequently and it does present an appraisal problem. However, there are no buildings that I can detect that are going to be taken; there will be no dwellings and that leads me to this statement that we are required to make at every public hearing, that the Montana State Highway Commission - they do maintain an office in Butte and in each one of their districts, as well as in the capitol city here, on relocation, whereby if anybody is affected by losing their dwelling, or a tenant by his rented property, that we do offer assistance over and above the matter of appraisal for the property. This assistance can take various shapes and forms, from paying for moving your furniture to the payment of relocation of businesses. It all depends upon the extent of the acquisitioning and how it affects you. Fortunately, on this there will be none of that but we are required to make that announcement. I do have some pamphlets here entitled "Your Highways and Your Property, Relocation Assistance in Montana." This is a brief pamphlet that is issued for general informational purposes only and you are welcome to take a copy of it. If we don't have enough to go around, I will take your names and addresses and we will see that you get them if you are interested in that. I would say that from the time . . . you private property owners . . . from the time that you are contacted by the appraiser it probably will be three to six months before you are contacted by our negotiator, regards of when the project finally goes to construction. Once we get the authority to proceed why we go on the appraisal and on the acquisitioning of the highway of the necessary right of way and if you have questions about this, I would be very glad to answer them. I believe that just about explains it.

ANDERSON: Thank you, Mr. Keyes. Before we do open it up for discussion, I would like to mention that the Forest Highway Project, which is the west side of the pass, is one hundred percent financed by the federal government. While the east side of the pass is a Federal Aid Project, the federal government does participate in the financing, planning and decisions on this in cooperation with your State Highway Department and on this particular section they do finance . . when this goes to contract, will be approximately 74% federal and 26% state funds. Now, before we begin you will notice that we are recording everything that is being said here this evening. This affords us an opportunity to make a typewritten transcript of everything that is discussed here this evening. This will be furnished to anyone who wishes a copy of it, free of charge. For this reason, we do ask that anyone having a question, please come up to one of the microphones, state your name, who you represent if you represent a group of people, corporation or something like that. We would appreciate that too. Now, Mr. Kologi, you had a question before we started?

KOLOGI: Yes. There is one thing I should have mentioned before. The Federal Highway Administration indicated that they would have their first two miles, hopefully, under contract next summer, with the other two miles on the west side probably the summer after or so. It's going to be longer than that on the east side. The way it looks to us, the way our financing looks right now, it will probably be 1975 or thereabouts, but we do want to proceed with our design and get the right of way secured so that if we do come upon some more funds that the project would be ready to go.

ANDERSON: At this time we will open it up for any comments that you folks have; anything that you see that you would have objections to - constructive criticism we accept. With that, would someone like to begin? Would you please step up to the microphone if you can. We have two of them here. We might be able to pass one back.

MUELLER: Thank you. Kermit Mueller, President of the Helena Chamber of Commerce, and I would just like to say on behalf of our highway committee and, of course, the directors and the chamber, that we are thankful to see this project getting under way. In fact, with all urgency, we would like to see a four-lane straight highway all the way from Garrison to Three Forks and built just as soon as possible. We feel the impact of traffic being taken away from our area because of this and we know that our line through, from Three Forks to Garrison, is a good line and it ought to have a first-class road. I think this is fantastic, what you have in mind here. The only criticism . . . this would be on my behalf rather than speaking for any of the chamber or the highway committee . . . I'd like to see it straightened out a little bit more. I remember, and I recall over the years, the hundreds of accidents to transpire on this east side of MacDonald Pass and I don't think that you can do enough to straighten out that road and cut down that grade, or run it around in a roundabout way so that it prevents more accidents. These tankers, in the wintertime, are piled up there on that horseshoe bend every winter and they come over the sides of these embankments and there's all kinds of problems on that and I think, in view of the fact that this road is being designed for 20 and 30 and 40 years from now when all of these cars will be made more powerful and faster all the time, that this consideration should be taken into consideration. With that, I thank you very much.

ANDERSON: Thank you.

MUELLER: Thank you.

ANDERSON: Someone else? Yes, please. Come up to the microphone.

MATTICE: I am Steve Mattice, present owner of Mattice's poor farm and I am interested in this one mile through here. First, Mr. Keyes, you mentioned the fact about fencing right of way where it goes through private property, where it isn't presently fenced. I think that all of the private property you go through is fenced at the present time.

KEYES: The present policy of the Highway Commission is if we invade the present perimeter of any private property, we have to reestablish that enclosure.

MATTICE: And as I understand, talking to this gentleman here, he said that they was going to continue the present underpasses and he mentioned the cattle underpasses and, of course, I imagine . . you mentioned a few approaches here. I assume that you are going to make approaches where the ranchers go into their fields because up there we do have two or three approaches where we go in to maintain our property, and we are also doing a little farming up there.

ANDERSON: Do you want to comment on that Steve, or Jim?

KOLOGI: Well, I don't know whether we can promise you for sure that you are going to have those stockpasses but we will sure do our best to get them in there. They do cost money and they have to be justified, as the saying goes, but we will sure do our best to get those underpasses in there for you and I'm quite sure that you could have an approach into your field pretty much any place you really needed it.

ANDERSON: Mr. Keyes was wanting to make a statement.

KEYES: I drove over that road today and I did notice that one stockpass there as you get down here close to the end of the road and there's little doubt in my mind at this time that it couldn't be perpetuated because of the usage it appears it is getting at the present time. However, the "do" or "don't" of the stockpass is predicated upon economics. We have to appraise your property with it and appraise it without it, and if the difference comes up to a justification of putting it in, that's the mechanics of it, sir. I don't believe that there . . I didn't notice any other stockpasses on the route.

MATTICE: There's one a mile further up the road.

KEYES: Is that the one with the poles; the corrals around on both sides?

MATTICE: No, that's the one that . . that's mine.

KEYES: I see, but there is . .

MATTICE: That's the one a mile above it.

KEYES: I see. I missed it, yes

KOLOGI: Back to this fence one more time. There are areas up near the summit where there's quite a problem with cattle on the road and those will be fenced on the new highway to keep those cows off the road.

MATTICE: Because that is going through Forest property, but I think all your private property is fenced because that mile through my place, I practically gave it to them and it's cost us several hundred dollars keeping up the fences with people running off the road and the cattle getting down in there. You have to patrol it almost every day because in the last . . well, I don't know how long the Highway Patrol has been in there - been in effect - but they have never notified me that somebody has gone through my fence and I know they have investigated many of the accidents and it would just be a matter of stepping to their microphone and calling up the Highway Department, or calling up anybody that I could be notified. I'll go up there and either find cattle out or somebody will notify me that the cattle are on the highway and then I'll go look up - find out where somebody went through the fence, and go back and get material and fix it up. I don't know who maintains the Interstate but I am in hopes that the Highway will build a fence and maintain it because it is a very vital item and a necessity that the livestock be kept off the road and it's hard enough as it is with both ends open the way it is, where cattle can come down off the forest and then, as I said, leaving the gates open and people running through it, it is quite a problem to maintain a road. It looks to me like they're kind of going backwards. You say you're going to build a 50-mile road up there. They can go 70 on that one now! (Laughter)

ANDERSON: Go ahead Steve.

KOLOGI: They probably can and some of them do, but they don't all make it. (Laughter) The thing is, there's some curves . . you're probably not familiar with our lingo for how we describe the sharpness of a curve but there are curves up here that are what we call a 20 degree curve and the sharpest curve that we propose here will be a 10 degree, with the bulk of the curves being a 7 degree-30 minutes so they will be considerably flatter than on the present road, but no matter how flat you build them, there is going to be somebody that wants to go faster than the road was built for.

MATTICE: What about going across the horseshoe bend?

KOLOGI: It would be quite a problem to build a road across there and, also, it would make it shorter and as soon as you make it shorter, it also gets steeper and the thing is already steep enough. We would certainly like to get rid of some more of those curves. We're not arguing that but we just don't feel it is within the realm of practical economics to do much more than what we're proposing here.

ANDERSON: Does someone else have any statement to make? Any questions?

ERICKSON: I have a couple of questions that I would like to ask.

ANDERSON: Would you step up to the microphone Mr. Erickson, please?

ERICKSON: Thank you. I'm Albert Erickson and a member of the Helena Chamber of Commerce Highway Committee. I also am representing the Montana Automobile Association, an affiliate of Triple A. There are two questions and I don't know who can answer them, but one concerns highway safety and the other one concerns financing. I did not understand from the explanation whether the four lanes are to be divided, if there's to be a median or a divider of any sort or not?

ANDERSON: No, that's a flush median.

KOLOGI: These lanes will be without a median. There will be just a paint stripe; a double paint stripe.

ERICKSON: It will be four lane?

KOLOGI: Right.

ERICKSON: No guard against passing out into the other lane?

KOLOGI: Well, there shouldn't be any call for people passing out into the opposing lanes when they have two of their own going in there. Yes, it's bound to' There's going to be some people that will be doing what they shouldn't but . .

ERICKSON: No plans at all for a guardrail down there?

KOLOGI: No, we do not plan on a guardrail median.

ERICKSON: Well, I think you are missing a safety bet when you overlook that. Another thing I would like to ask about. Was there any consideration made for a wild truck detour? In other words, when a truck's brakes go out, which often occurs on a pass such as MacDonald Pass, the truck is out of control and naturally is very difficult to stop and I noticed up in Canada on a number of their passes, they do have what they call a "truck detour" which just takes off and goes up the mountainside and it's an outlet for the truck driver at least to get his truck off the highway before he kills a lot of people. Was there any consideration given to that?

KOLOGI: We have built truck-escape ramps in different places in the state. Just in the last year or two we completed . . I believe it was three of them up by Babb and we have given consideration to this and I don't know if we really have made up our minds whether we're going to put one in or not. Probably if a person was going to have one, it would be before we get to the big horseshoe bend down by the Girl Scout Camp. If you can visualize yourself coming down that mountain, the place for a truck-escape ramp is someplace where you can run up the mountain to get the trucks slowed down. But, on your right-hand side coming down the mountain - on your right-hand side there's nothing but air just about anyplace. One thing a person could do would be to build the truck-escape ramp on the opposite side of the road and then a truck driver that had an out-of-control vehicle would have to take his chances across the opposing lanes of traffic so there's definitly some hazard there; there's a potential head-on collision. To answer your question, we have given it consideration and I don't know that we have really come to an answer yet. We realize it's a problem. This new highway is not going to solve trucks getting out of control. They're still going to get away and they won't be able to ride it all the way to the bottom. It isn't going to be that straight, so it is a problem and we're aware of it but I don't know that we really have the answer.

ERICKSON: I don t believe a financial tag on the total project was given tonight at all. I am curious to know what both the Forest Service Section and, also the State Highway Department . . . what's the total estimate on the construction costs of this?

KOLOGI: Our estimate for the east side here, at today's prices, is about $3,000,000. I really can't say what it might be by 1975 or thereabouts, but at today's prices, we estimate the cost at about $3,000,000. Now I'll ask Mr. Westby for the other side.

WESTBY: On the west side of the pass we estimate about 2.8 million, exclusive of right of way.

ERICKSON: About five and one-half million without right of way. Is this . . close to six without right of way. Another question. I don't want to ask all the questions but they come up in my curious mind. Was any consideration given to a plan for three lanes so that you might build this new highway faster? In other words, this doesn't look like it's going to be completed until what . . . sixty or 1976-1977?

KOLOGI: Well that was what we started out with. When we programmed the project we had decided that we were going to have a three lane. One lane coming down and two lanes going up and we got to working on it and we finally decided that we might be building more hazard then we were doing good and that it would be much cheaper to add the fourth lane at this time than to go back maybe ten years later and try and take a thin slice off of those cuts and add a thin slice on the fills; get more right of way again; go back through and topsoil it all again and seed it again. Like I say, that's what we started with was a three lane and we finally decided that we would be better off with this minimum standard four-lane. I think Grover Powers has a comment.

POWERS: Well, Steve has told you about this matter of three lane and four lane and some costs, Al, and you asked about the safety of the highway and I'm sure that we're all real concerned about it and you add it up, no doubt, in your own head - when you've got a $6,000,000 project and limited funds there are - you can probably realize that again we're trying to build a highway over MacDonald Pass with the money we have and there's probably some compromises and, along with this, when Steve was explaining a three versus four, he worked hard on various typical sections of roadway widths to fit in Of course, the wider the road is up that mountain, the more it costs to build because we're talking about big cuts and big fills. We're talking about the very minimum standards of 50 mph that we can get in there and the reason we're talking about it is, that's the kind of terrain we're in. So Steve, I believe told me one time that this four-lane highway, like we finally compromised on, is within a few feet of being the same paved width of a three-lane highway when you have no medians. Also, a three-lane highway is only for truck climbing lanes and it doesn't allow passing on these various curves without a certain amount of sight distance for the other cars, you understand. Therefore, the curves would have to be either restricted for passing or lots bigger curves to get the sight distance, or they would have to be striped and no passing. A four-lane highway, one can pass in safety without worrying about an opposing driver coming toward him unless he is out of control, so that we were able to build sharper curves and maintain the design speeds without restriction within a very few feet and probably not many dollars less than a three-lane highway. If we would increase it to the full divided four-lane highway, we would have run this cost up much more.

ERICKSON: How much more would it have cost to have guardrails in the middle of the highway like you do on the interstate? I personally think this is a mistake. I think you're going to have a lot of problems.

POWERS: Of course, Al, then we get into considerable debate in even our own organization and with the various experts about, how do you divide a highway and cause it to be safe? We have now established by the new safety criteria that's come out that a median rail must be 14 feet wide, minimum We built these out here through Wolf Creek Canyon in eight feet and we tapered the guardrail but we had an unsafe guardrail. Now we have to block the guardrail out to have a safer one; also the shy distance, and it was determined that to have a safety median guardrail, the minimum width was 14 feet. Now I know, from a practicability standpoint, one could perhaps get eight feet there with something in as a barrier and be safer than this flush, but where do you arrive at what standards you're going to use when you have so many experts telling you what it ought to be? That's about all I can say.

ERICKSON: I know you do have a lot of experts but what I want to know is this. Is this latest 14-foot . . . is that now required on Interstate?

POWERS: Yes.

ERICKSON: Then I'm going to shut up.

POWERS: That is true and we are even considering modifying wherever economics will permit because safety is something that we have failed to understand and probabaly design properly over the years. Our guardrail standards are totally different; the median widths are different than they were a few years ago. We are now concerned about obstacles within thirty feet of the highway. We're trying to put up impact cushions that people can hit - this truck-escape lane- and the reason we are doing this is because the public wants a safer road. I think we will consider what we can do to make this safe. We came here to this public hearing hoping that we would get comments like you have and hoping that we could explain to you people why we have done what we are doing. It is a matter of money. We have studied it carefully and we don't know a better way, but if there is a better way we will be looking for it.

KOLOGI: Back to this median rail a little more. This rail we put out in Wolf Creek Canyon hasn't been completely successful. There is problems with it. If we were to put a median rail in this road, it would probably be a concrete rail. It's been quite successful as a median rail. Other states have used it and it has worked good. Idaho has used quite a bit of it. It costs about $12.00 a lineal foot which comes to about $60,000 a mile, or something between a third and a half a million dollars just for the rail, but that is just the start. Then you have to widen the road to have a place to put the rail and that's where the cost starts mounting. When you have a rail you are probably increasing the number of accidents, although you decrease the severity of them. You'll have a lot of property damage accidents. There will be a lot of people banging into the guardrail. We found that out in Wolf Creek Canyon. They bang up a lot of cars but they don't have any head-on collisions. There's no doubt about that; it does save the head-on collisions.

GRANBY: I'm Russ Granby from the Clausen Ranch. Could you tell me what type of fence you're going to put in?

KOLOGI: We usually try to put the same type of fence as what is there now, unless the landowner has need or desire for some other type of fence.

GRANBY: Five wire?

KOLOGI: I think so.

GRANBY: Is that going to take some arguing with you people?

KOLOGI: If you've really got a need for it, I guess five wire it is.

UNIDENTIFIED: If you don't want cows on the road, you want more than what is there.

KOLOGI: If you have a good argument for it I think that you will probably get your five wire fence.

MATTICE: We have five.

KOLOGI: You do. I think the type of fence can be satisfactorily worked out.

GRANBY: About these right of way entries; are they going to be cattleguards?

KOLOGI: Oh, now like where the road goes down towards the old Carson Ranch, for instance . . . I don't remember whether that is fenced on both sides or not. Okay, if it was fenced on both sides we would tie into that fence with ours and then we wouldn't need a cattlguard. If we were going on a public road, if we were having an approach to a public road that was not fenced, we would probably put a cattleguard. If just a field approach, we would just have a gate but, if it's the appraoch to your residence that you use every day you would probably put a cattleguard.

GRANBY: If there is one now you'll replace it?

ANDERSON: Would you use the microphone, please?

GRANBY: If there is an existing cattleguard now you will replace it, like Camp Thunderbird and this one here?

KOLOGI: Right. If there's an existing cattleguard in a place that needs a cattleguard - that's where there is frequent use where you don't want people out opening the gate everytime they go through, sure, we'll put a cattleguard, but if it's just for a field approach that you just use once a week, why then we would not put a cattleguard even though it may have one now. Does that answer your question?

GRANBY: Yes. Now this highway is going to be fenced all the way up?

KOLOGI: We plan to fence it anyplace where there's any potential at all for cows on the road. Where we have a real steep fill slope or a cut slope that the cattle can't get over, why then we will just tie the fence into the slope so that we don't have to fence that, if there's no chance of cows getting on the road, but we do plan to fence it every place there's any chance for cows.

GRANBY: Yeah, well that's most of the way up the hill.

KOLOGI: Right, although there will be some rock cliffs and steep cuts where we probably won't fence it.

GRANBY: Fine, thank you.

ANDERSON: Does someone else have a question?

WALL: I am C. M. Wall. I'm from Helena and my address is 26 11th Avenue. I'm a member of the Helena Highway Committe for the last thirty-eight years and I confirm our president's statement that we sure appreciate having something done with MacDonald Pass. I think you all will recall that that highway was built, I believe, in 1935 by Sam Moreno and he had just bare mountains up there and it cost $50,000 a mile. It's really done its duty and its really carried traffic and paid its way and it's time that we should have a highway over MacDonald Pass to come to the capitol city. I was here from the start of the meeting and I still don't quite understand when you intend to start the Forest section and the Highway section and I would be happy if you would put it in the minutes of the meeting and I would like a copy of them because it's quite confusing. We have appeared before this Highway Commission millions of times and when they put it off to 1973 and 1974 and 1975, we don't see it for ten years. Now, that's rough! We were promised the highway from here to Garrison fifteen years ago, the Helena Chamber of Commerce, and through many commissions and many administrators of the Highway Department and several governors, we're still driving a cow trail from Garrison on east, and from Helena over MacDonald Pass; a highway constructed over one of the best passes in the State of Montana. You can always get over MacDonald Pass when you can't make it any place else. Your bad weather reports will prove that to you. When everything else is closed, MacDonald Pass is open due to our good neighbors up there, John. I'm also a resident of the Forest Heights summer home area. I've had a home up there, a summer home, since 1951. It's just below the present Highway House. I travel this road every day, once, twice, sometimes four times in the summer. In the wintertime I can't get into my house so I go up and see John but he's generally gone away somewhere. I think that the most important thing that we can have here is action! MacDonald Pass has been tough. I don't believe there's a maintenance crew in the State of Montana anywhere that maintains a highway as fine as the MacDonald Pass highway crew maintains that road; it's always in perfect condition. Now if you just want to go a little ways to inspect how good it is, just go over Boulder Hill at anytime of the year and you will find that MacDonald Pass has had the best of care by that maintenance crew that we've had up there, John and it's the safest road in the wintertime to go over because there is a crew there that works down the west side and down the east side, and Helena is long, long past due on getting that highway constructed. I would urge you, if it is possible, to set it up for fiscal '73 and I think you have the money. It's been demonstrated that you do have the money in other projects that you have completed in Montana in the last five years and we are entitled to it and I do hope that you do something about it. I agree with the Department when they say that they don't want a guardrail. My friend Grover Powers and I sit down together every once in a while and - we don't like this, we don't like that - but we do love a highway that you can get over and go by. If you put a guardrail in the middle of that road, Al, you'd have a problem with snow up there when they start pushing that snow off the hill. I'd just as soon take a chance on the yellow stripe. It would be a lot safer than a guardrail. I just want to ask one question from you here. I've asked a few but I think you have them in the record. Have you ever considered going straight west through the Clausen and Carson Ranches and through a tunnel?

KOLOGI: Well, I'll try and get your questions in order here if I can remember them. Your first question was about the scheduled letting dates? The first project, as currently contemplated, will be the first two miles west of the summit, from about the top down to, oh, a short distance from where the snowmobilers play and then the next year after that would be the lower two miles on the west side. The way it looks now, the whole east side is scheduled for about 1975. We are now designing it in one piece, that is, for the entire six and some-tenths miles. If funds become available so that we could, say, let two miles or three miles before that, we want to have the whole thing ready so that we can bite off two or three miles and let it to contract. I don't think anybody can promise you that this will be let next summer or that the other one will be let the summer after, or in fact, anything. Our funding is always so uncertain but we will do our best.

WALL: But you're like a man working for wages downtown. Each year your wages goes up and you have more money every year than you contemplate when you make our your budget. Isn't that a fact; your income this year is much more than you contemplated a year ago? That's why I think that MacDonald Pass should be programmed in '72, '73 or '74 at the very, very latest because it's a necessity and I think it's time now that Helena get some consideration from the Highway Department in the main road that comes into town. We're still the capitol and even if you fellows all live here and go over the road, why I think Helena is entitled to consideration on this particularly valuable road for everybody that travels west by truck or by car, especially in bad weather when you can't get over any other pass but MacDonald Pass.

KOLOGI: Thank you, sir.

WALL: Thank you.

KOLOGI: And like I say, we will get this as soon as we can. Now you asked about if anybody had ever studied a tunnel from, oh, like back of the Carson Ranch over in towards Mike Renig's and it has been studied numerous times over the years, both as a highway tunnel, as a railroad tunnel and as a combined tunnel, but tunneling is terribly expensive. When we were studying that - that was several years ago - and at that time tunnels were costing $2,500 to $3,000 a lineal foot, and then a person would think that once you get the tunnel built that's the end of it, but a tunnel costs more to maintain than this road does, even considering the fierce winter conditions up there. A tunnel has to have ventilating equipment, lighting equipment; you have to have standby generators in case the power goes down; you have to keep the ventilators going and the lights on, so we've considered tunnels very seriously but the money wasn't available.

ANDERSON: Does someone else have a question; a statement that they would like to get on the tape? Would you come up to the microphone. I don't think we can get you on the tape, Kermit. Could you pass that microphone back? That is what we are here for, folks, to get this on record so it can be reviewed by the engineers who are designing this.

MUELLER: The one other question that I have is, is there any possibility of eliminating that hairpin curve by going around a roundabout way or some other way to eliminate that? For some reason or other, that really bothers me.

ANDERSON: Go ahead Steve.

KOLOGI: Well, I dont blame you. It bothers us too and I really don't know how we'd get rid of it. I'm sure it could be done but it just costs a lot of money to get rid of something like that. Really, I don't believe, over the years . . . that thing maybe bothers people but that hasn't been the really hazardous spot on there. The hazardous spots have been some of these up above it where they just go off the edge and down a long ways.

MUELLER: In consideration of future driving and more transportation and faster . . the need for faster road, is that all considered at the same time?

KOLOGI: Well, I'm not completely sure I understand your question.

MUELLER: It would seem that it's so sharp and pronounced that it isn't with the best of thinking, for a road for the future; for forty or fifty years from now.

KOLOGI: Well, if this was out in the prairie someplace where a curve like that would come as a surprise to someone, it would definitely be a terrible hazard but in a mountainous area people anticipate curves. We don't really feel that this curve will be any worse than any of our other curves on mountain passes.

POWERS: I'm in bad trouble getting up here because then I'll get in a debate but I'm not up here to do that. I'm up here to amplify something that hasn't been said. There were extensive studies made in the last fifteen years, about how to get over MacDonald Pass. Our Federal Highway Administration long before us studied - had contour maps - and all that we've done in the last six or seven years is pick up many things that have been considered before and analyzed them, trying to apply today's standards, and I know that there was lots of effort made to try to eliminate the very thing that you are talking about, and some of those efforts I saw were to come back in here and come around and if you look over in here, the further you get over in here the more rugged, sharp, peaky, rough construction you run into. As Steve said, when you get on this side the ground drops away and there's no way to get across. This sharp curve is the only physical terrain going up MacDonald Pass in that area that gives you someplace to stand while you're building and so this is why we're in there. It's a matter again of economics. Now, the design speeds for that curve - he said ten degrees; there's something a little less than 50 mph. A 50 mph speed theoretically on a curve six, seven and a half degree, no matter if it goes clear around in a circle and meets itself, has the same safety characteristics as the one that just goes part way around the curve. I think you understand that. I wouldn't stand here and try to defend that sharp curve as being good, anymore than I would some of the other things, but it is the best we know how to do and if we can discover a better way we would have had it on the board and brought it up here tonight.

MUELLER: Well, thank you very much. You still leave it open for study then? (Laughter)

ANDERSON: Thank you, sir. I might mention that all of this information that we do have here this evening is available in Helena or Butte for public inspection at anytime.

McCULLOUGH: I'm W. T. McCullough. I'm on the Chamber of Commerce Highway Committee. Naturally, I'm quite interested in this construction over this pass as we use it a lot. Now, the thing that's bothering me is when you start this construction, how are you going to maintain your traffic? Are you going to build one lane at a time and maintain your traffic through the season so that there won't be a sign up at Garrison and all the traffic goes through Butte or through Great Falls?

KOLOGI: We'll try to keep traffic going through there all the time. It will be a construction area and, just because it is a construction area, I would anticipate that there would be maybe some people go via Butte that would otherwise come this route but we're not going to encourage it. We're going to do our best to keep two lanes of traffic moving through there all the time. We're building a road that will be over twice as wide as the one that's there so we will be able to work on one side and then put traffic over there and then work on the other side and kind of switch traffic back and forth and we'll do our best and we're not going to have the road closed, but there will no doubt be some inconvenience.

McCULLOUGH: As it is usually the case, by the time you get this under your programming, it will be in the start of the new fiscal year and that would be in the height of the tourist season and, as this past year proved to me, that our library over here and a few attractions here brought an awful lot of people into Helena, but I know from my years as operating the Montana Powder and Equipment Company, if I might use the term here, in furnishing supplies for contractors that I have seen the time that these roads would be closed where you're running in this kind of a rugged condition, for several hours at a time. Now, today they have bigger and better equipment and they can clear it faster and so forth, but it's still quite an economical problem for Helena to face during this construction.

KOLOGI: Right, and there will always be some inconvenience during construction and I would anticipate that we'd have problems here similar to what you've had in the last year up by the Gary Cooper place, up through there. Traffic has made it through all of the time but they do occasionally have to stop for a few minutes while they get the mess cleaned up from the last blasting operation.

McCULLOUGH: I realize that, too, but there wasn't a junction twenty miles to the west of it that they could be advised to go the other way.

KOLOGI: Like I say, we won't encourage them to go the other way. A lot of this heavy rock work can be done in the wintertime when there aren't many tourists. Of course, some of the operations have to be conducted in the summertime, like surfacing and that. They can't hardly do that in the winter.

ANDERSON: Yes, it is regrettable that highway construction does inconvenience anyone. We try to do the least possible. Any further discussion?

McCULLOUGH: Where you're building a four-lane highway why it would be, I would think, quite the right thing to do to construct one side and transfer the traffic over to the other side and not disrupt the present road and tear it all up and make it impossible for people to go over it without breaking tires and so forth.

KOLOGI: Thank you. We try to do that wherever we can. Of course, there's always some places where you can't, but where we can we will.

QUIGLEY: I'm John Quigley from Frontier Town and, just to put it on the record, will all present approach permits be honored?

KOLOGI: Well, I guess maybe I don't know for sure what you mean but you will have an approach. Is that what you mean?

QUIGLEY: I have four of them, not all at one place.

KOLOGI: I'm not sure where your approaches are. You have the one up at Frontier Town and it will . . .

QUIGLEY: And then there's three down below.

KOLOGI: You have . I can recall one down here that was built here three or four years ago

QUIGLEY: There's two across from it.

KOLOGI: If there's need to perpetuate them, yes we will, if we can. I just can't in my own mind quite visualize these other two and if we get into a situation where we can't build it, why we can't. . .

QUIGLEY: Like you say . .

KOLOGI: It kind of sets on edge and I just don't recall even seeing those other two. I'm aware of the one on the uphill side of the road and I believe we can perpetuate it, maybe not in its exact location, but at least we will be able to hook into that road you have going up the side of the hill. Those ones below the road, I sure can't promise anything.

QUIGLEY: They are pretty steep.

KOLOGI: I just can't say. After we get further along we will be able to answer you better.

ANDERSON: Any further comments? If, after you leave here you decide that you would like to have said something, write it down and send it in to the Montana Highway Commission. We will accept it and make it a part of the transcript. We do have a time limit on this of ten days to two weeks after the hearing we will accept any written statements you care to add to this hearing this evening. Oh, excuse me.

McCULLOUGH: I want to join in with the rest of the people here and the members of the Chamber of Commerce of the fact that we are, of course, very glad and proud of the fact that we are going to have the pass over - a new road over MacDonald Pass, but I can also sympathize with Neil Wall. At our ages, why I don't know whether we might be here for the opening of it or not. (Laughter)

WALL: Well, I hope so, Mac.

ANDERSON: I hope so, Mac. (Laughter)

WALL: Well, he's got a grandson coming up. He'll be here!

ANDERSON: We do have our preliminary plans here this evening if any of you would care to get ahold of the engineers. I'm sure they will stick around a few minutes afterwards to go over any private details with you. Any further comments? Yes, anyone that wishes a copy of this transcript, if they would come up after the meeting is adjourned and sign this pamphlet, we will furnish them to you free of charge. Mr. Westby, do you have anything further?

WESTBY: I think not.

ANDERSON: Mr. Kologi? I am sure everyone is in favor of the project and the sooner the better, I take it. (Laughter) We do thank you for coming this evening and we appreciate all of your remarks. I am sure they will be considered as strongly as they possibly can. Any further comments from the Federal Highway Administration? Anyone else from the Highway Department? We do thank you again for your participation and good evening.

INTER-DEPARTMENTAL MEMORANDUM

MONTANA STATE HIGHWAY COMMISSION

To GROVER POWERS, P. E., Preconstruction Engineer

Date December 2, 1971

From JACK R. BECKERT, P. E., Assistant State Highway Engineer - Engineering

Subject: FHP 28-1(1), FHP 28-1(2) and FR 249(21), U.S. #12, Lewis & Clark and Powell Counties

On the occasion of the November 30, 1971 Commission meeting, the Montana Highway Commission approved the combined corridor and highway design public hearing for the subject project.

JRB/be

Date Recd. Precons. 12-2-71
MAIL ROUTE
Initial
Attach
30 [illegible] RMH
30 Field Design
30 [illegible] Design
31 [illegible] Engineers
32 West Region
32 Landscape
33 East Region
31 Hydraulic
[illegible]
Consultant Design
File
Info
Act

Avoid Verbal Instructions

MONTANA STATE HIGHWAY COMMISSION

To Jack R. Beckert, P.E., Assistant State Highway Engineer
Engineering
From Lewis M. Chittim, P.E., State Highway Engineer

Date November 30, 1971

Subject: FHP 28-1(1), FHP 28-1(2)
FR 249(21)
U.S. Hwy #12
Lewis & Clark and Powell Counties

The Montana State Highway Commission in regular session approved the combined corridor and highway design public hearing on the above projects. The only comment was: "Let's get her built!"

LMC:ld

Date Recd. Preconst. 12-2-71

Act	Info	MAIL ROUTE	Attach	Initial
		30 [illegible]		
		30 Road Design		
		30 [illegible] Design		
		31 [illegible] Engineers		
	✓	32 West Region		
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		36 Traffic		
		37 [illegible]ing		
		[illegible]		
		Consultant Design		
	✓	[illegible]		

Lewis M. Chittim
Avoid Verbal Instructions

MONTANA HIGHWAY COMMISSION
RECEIVED
OCT 26 1971
HELENA MONTANA

March 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OUTDOOR RECREATION
PACIFIC NORTHWEST REGION
1000 SECOND AVENUE
SEATTLE, WASHINGTON 98104

IN REPLY REFER TO:
D36 Your reference:
U. S. 12, Elliston to Rimini Road
FHP 28-1 (1 & 2) and RF 249 (21)

OCT 22 1971

Lewis M. Chittim, P.E.
Montana State Highway Engineer
6th Avenue and Roberts
Helena, Montana 59601

Dear Mr. Chittim:

We received your September 13 notice of a combined corridor and design public hearing for the above referenced project. We were unable to attend the hearing on October 14. However, we request that this letter be made a part of the hearing record.

One of the trails being studied under Section 5(e) of the National Trails System Act (P.L. 90-543) is the proposed Continental Divide trail. If established, it will extend generally along the Continental Divide from Canada to Mexico and would cross U. S. Highway 12 at McDonald Pass. This study is being coordinated by the Bureau of Outdoor Recreation's Mid-Continent Regional Office in Denver, Colorado. The study report is now being prepared for publication.

Our concern with the highway project design is that access to both north and south junctions of the proposed trail with U. S. Highway 12 be provided from the road and that hikers on the trail be able to cross the highway right-of-way without significant difficulty. The provision of a small parking area at the trail-heads could be incorporated into the new highway's design. Finally, we are advising that if construction of this project necessitates the taking of additional right-of-way where present trail facilities exist, it may require preparation of a Section 4(f) Determination as required under the Department of Transportation Act of 1966, as amended.

?

We would appreciate your sending us additional information concerning the amount of right-of-way to be acquired for this project in the McDonald Pass area.

Sincerely yours,

Maurice H. Lundy
Regional Director

E. E. Allen
Acting Regional Director

UNITED STATES GOVERNMENT
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Memorandum

TO State Highway Commission
Helena, Montana
07-JRB

DATE: August 9, 1971

In reply refer to: 08-24.8 DA2

...Y COMMISSION
RECEIVED
AUG 11 1971
HELENA, MONTANA

RMJ

FROM H. N. Stewart
Division Engineer
Helena, Montana

By: R. N. Jones
Assistant Division Engineer

SUBJECT: Montana FHP 28, MacDonald Pass West
F 249(21), MacDonald Pass East

Attached are copies of our August 9, 1971 correspondence concerning the joint public hearing on the MacDonald Pass route.

Attachments

Act | Info | [illegible] | RIGHT OF WAY | [illegible] | OTHER

Date Recd. Preconst. 8/9/71
MAIL ROUTE
Act | Info | Attach | Initial
30 GOF | Right
30 Field D[illegible]
30 [illegible] Design
[illegible]
[illegible] West Region
[illegible] Landscape
[illegible] Relocation
[illegible] Hydraulic
[illegible]
37 Pub. Hearing
38 Sec. Roads
39 Consultant Design
File

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Mr. John E. Mors, Chief
Federal Highway Projects Division
Vancouver, Washington

August 9, 1971

08-24.8 DA2

H. N. Stewart
Division Engineer
Helena, Montana

By: R. N. Jones
Assistant Division Engineer

Montana FHP 28, MacDonald Pass West

In compliance with your telephone request through Mr. Westby, we have discussed with the State and determined that October 14 is a proper date for the joint location and design public hearing on this project. The hearing is to be held in the Highway Department Building, probably the auditorium, on that date. Time for the hearing has not been set.

The Public Information Officer for the State indicates that he should receive the usual public hearing announcement information by September 3 to allow a full 30-day advertisement.

It is our understanding that this will be a joint hearing with the State conducting the eastern portion and in that regard we have a copy of a letter from the Forest Service in Missoula dated July 29, 1971 concurring in the State's proposal to prepare a negative declaration in lieu of an environmental statement for the east side. A copy of the correspondence
* is attached.

* Attachment

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

MONTANA STATE HIGHWAY COMMISSION

To Don Anderson, Public Hearings Director

Date July 28, 1971

From Steve C. Kologi, P.E., Regional Engineer,
West

Subject: FHP 28
MacDonald Pass W.
F 249 (21)
MacDonald Pass E.

Mr. Stewart of the Federal Highway Administration has advised us that by September they will be ready for a combined location-design hearing for the MacDonald Pass West project. Also, by that time, we will be prepared for a location-design hearing for MacDonald Pass East.

Mr. Fetter has the display for the MacDonald Pass East project and he is preparing a draft study report.

We assume that the Federal Highway Administration will furnish you their display and draft study report for the MacDonald Pass West project in the near future.

32-SCK:sp

cc: J.R. Beckert
G.O. Powers
R.B. Dundas
~~K.F.~~ Skoog
S.C. Fetter

Stephen C. Kologi

Stephen C. Kologi, P.E.,
Regional Engineer, West

610 East Fifth Street
Vancouver, Washington

May 12, 1971

08-72.2-3

Mr. Neal Rahm, Regional Forester
U. S. Forest Service
Federal Building
Missoula, Montana

J. E. Mors, Chief
Federal Highway Projects Division
Vancouver, Washington

MONTANA HIGHWAY COMMISSION
RECEIVED
MAY 17 1971
HELENA, MONTANA

Montana Forest Highway Route 28, McDonald Pass - westerly

We are preparing for a combined Corridor and Design Public Hearing on the subject route. The first section of this route is proposed for improvement during F.Y. 1972, therefore it is essential that we expedite hearing and route approval procedures in order that the State may begin acquisition of rights-of-way.

It is our understanding that the U. S. Forest Service has an approved Stage 1, Multiple Use Report covering the west side of McDonald Pass. We would appreciate receiving a copy of this report for our use in preparing an environmental statement and a design study report.

As you are aware, the State of Montana has responsibility for improving that portion of F.H. Route 28 east of the summit whereas the Federal Highway Administration will handle the design and construction on the west side of the summit.

In the interest of time it is proposed that we hold a separate combined public hearing covering the west side and prepare a negative declaration covering the environmental effects. This project is essentially an improvement of the existing alignment with the addition of auxiliary lanes. We are of the opinion that the proposed work will not have a significant effect upon the quality of human environment and as far as we know there are no controversial issues involved.

Your comments concerning this proposal are requested. In the event that it is necessary to hold a single combined hearing for both the west and east sides we may be delayed to the extent that it will be virtually impossible to get a construction project underway during F.Y. 1972.

cc: Montana State Highway Department, Helena

Date Recd. Precenst. 5-26-71
MAIL ROUTE
Initial
Attach
Info
Act
32 West Region
32 Landscape
33 East Region
34 Hydraulic
37 Pub. Hearing
38 Sec. Roads
39 Consultant Design
File

SECTION 6

ALIGNMENT STUDIES, REPORTS AND ESTIMATES

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

July 12, 1971

36-KFS
IN REPLY REFER TO

F 249(21)
MacDonald Pass - Eas

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

Forwarded herewith is a copy of a letter from the U.S. Forest Service indicating their preference for Alternate "D" between Stations 328 and 385 on the subject project. We concur with their recommendation.

Your letter of December 8, 1970, approved field survey and right-of-way studies on the portions of the project from Station 235± to Station 330± and from Stations 385± to Station 594+84. It did not give approval to proceed with design. However, subsequent correspondence has resolved the typical section to be used in the design.

It is therefore requested that we be authorized to proceed with the field survey, right-of-way studies, and design of the entire project from Station 235± to Station 594+84±.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

Enclosure

32-GOP;SCK;KFS:gm

cc: J.R. Beckert w/attch.
R.B. Dundas w/attch.
R.E. Champion w/attch.
S.C. Kologi w/attch.

DIV ENGR ✓
ENG COORD
ASST ENG-CO
ADM MGR
AUDITORS ✓
PRO CONT

GEORGE VUCANOVICH, CHAIRMAN
H.S. HANSON, VICE CHAIRMAN
R.E. COFFEY

MONTANA HIGHWAY COMMISSION
RECEIVED
JUL 6 1971
HELENA, MONTANA

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Helena National Forest, 616 Helena Ave., Helena, Montana 59601

REPLY TO: 7750 Forest Highways

July 1, 1971

SUBJECT: MacDonald Pass East

TO: Lewis M. Chittim P.E.
State Highway Engineer
State Highway Commission
Helena, Montana 59601

STATE HWY. ENGR.
CHIEF COUNSEL
ACCOUNTING
PLANNING SURVEY
BRIDGE
RIGHT OF WAY
MATERIALS
OTHER

As requested at our April 29, 1971 meeting we have had time to study the 4 alternate routes for MacDonald Pass East (Highway 12). We request that you proceed with survey and design on Alternate "D" between stations 328 and 385. We believe this route will have the least impact on the land from an environmental standpoint and still provide satisfactory alignment.

Your preliminary design summary of quantities show an excess of cut over fill of 403,667 cu.yds. We suggest the existing roadway between stations 344 and 350 be used as a waste area inasmuch as this is a through cut and will be relatively hidden from valley view. The chute on the south side of the existing road between stations 365 and 367 may be used as a waste area by extending the toe fill up to 400 feet south road. We suggest the existing roadway between stations 355 and 364 be used as an overview point.

Because the new route is in the immediate vicinity of the existing highway, we believe the environmental impact as a result of this upgrading to be negligable. For the same reason we would recommend a combined public hearing for route and design on the East Side project.

Accompanying this letter is a preliminary drawing of the proposed access road, signing and, to some degree, landscaping we propose to have included in the contract.

We will be available for meeting with you to firm up other construction requirements after you have finished the preliminary design on Alternate "D".

Parley Waters
PARLEY WATERS
Forest Engineer

Enclosure

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA MONTANA

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

32-KFS
IN REPLY REFER TO:

July 12, 1971

F 249 (21)
MacDonald Pass E.

✓SCF

U.S. Forest Service,
Region One
Federal Building
Missoula, Montana 59801

Dear Sirs:

This will acknowledge receipt of Forest Engineer, Parley Waters' letter of July 1, 1971, relative to the subject project. We are in agreement with his recommendation that Alternate "D" be selected for the survey alignment between Stations 328 and 385. We will proceed with the project utilizing this line and the line as discussed at previous reviews for the remainder of the project. When the preliminary plans are available we will contact you again for a detailed review of the project.

Mr. Waters' letter indicates that because the project is not in a new corridor, but rather is an upgrading of an existing alignment, that the environmental impact of the project will not be significant. We tend to agree with this analysis and propose that a negative declaration be prepared in lieu of an environmental statement. Please advise as to your feelings on this proposal.

(con't)

GEORGE VUCANOVICH, CHAIRMAN
HELENA

H.S. HANSON, VICE CHAIRMAN
BILLINGS

R.E. COFFEY

G. R. COONEY

JOHN D. WHEELER

Thank you for your assistance in developing the location of the subject project. If we can provide any information or assistance as the design progresses, please feel free to contact us.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

32-GOP:SCK:KFS:sp

cc: J.R. Beckert
R.B. Dundas
S.C. Kologi
S.F. Fetter

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

V

MONTANA HIGHWAY COMMI
RECEIVE
JUL 6 1971
HELENA, MONTANA

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Helena National Forest, 616 Helena Ave., Helena, Montana 59601

REPLY TO: 7750 Forest Highways

July 1, 1971

SUBJECT: MacDonald Pass East

TO: Lewis M. Chittim P.E.
State Highway Engineer
State Highway Commission
Helena, Montana 59601

2

As requested at our April 29, 1971 meeting we have had time to study the 4 alternate routes for MacDonald Pass East (Highway 12). We request that you proceed with survey and design on Alternate "D" between stations 328 and 385. We believe this route will have the least impact on the land from an environmental standpoint and still provide satisfactory alignment.

Your preliminary design summary of quantities show an excess of cut over fill of 403,667 cu.yds. We suggest the existing roadway between stations 344 and 350 be used as a waste area inasmuch as this is a through cut and will be relatively hidden from valley view. The chute on the south side of the existing road between stations 365 and 367 may be used as a waste area by extending the toe fill up to 400 feet south road. We suggest the existing roadway between stations 355 and 364 be used as an overview point.

Because the new route is in the immediate vicinity of the existing highway, we believe the environmental impact as a result of this upgrading to be negligable. For the same reason we would recommend a combined public hearing for route and design on the East Side project.

Accompanying this letter is a preliminary drawing of the proposed access road, signing and, to some degree, landscaping we propose to have included in the contract.

We will be available for meeting with you to firm up other construction requirements after you have finished the preliminary design on Alternate "D".

Parley Waters
PARLEY WATERS
Forest Engineer

Enclosure

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

Helena, Montana 59601

32-SCF

April 12, 1971

IN REPLY REFER TO:

F 249 (21)
MacDonald Pass E.

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

For your review of the subject project; we are furnishing the following information:

A. One set plan-profile for alternate alignments "A", "B", "C", and "D" located between Stations 328 and 385.

B. One summary sheet of alignment studies on alternate studies on alternate alignments "A", "B", "C", and "D".

The cross sections for the alternate alignments have not been enclosed, but will be available for your review at the time of the preliminary review.

As discussed by phone, the preliminary review for the alternate alignments is tentatively scheduled for April 28, 1971. Personnel should meet at the West Region Office, room 362, at 10:00 A.M.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY
Grover O. Powers, P.E.,
Preconstruction Engineer

32-GOP:SCK:KFS:SCF:sp

cc: J.R. Beckert
R.B. Dundas w/attach A. & B.
R.E. Champion w/attach A. & B.
S.C. Kologi✓
Regional Forester-Misl. w/attach A. & B.
Forest Supervisor-Helena w/attach A.& B.

R.E. COFFEY
JOHN D. WHEELER

[illegible]

October 28, 1970 32-SCK

F 249 (21)
MacDonald Pass

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

For your review of the subject project, we are furnishing the following information:

A. One set plan-profile (includes alternate "A" alignment).

B. One set cross sections (alternate "A" alignment)

The enclosed one set of plan-profile show the alignment changes as agreed upon at the first preliminary review held July 22, 1970. These alignment changes are shown as a dashed line and labeled alternate "A".

As discussed by phone, the second preliminary review is tentatively scheduled for November 18, 1970. Personnel should meet at the West Region Office at 10:00 A.M.

32-GOP:SCK:sm

Very truly yours,

LEWIS M. CHITTIM, P.E.,
State Highway Engineer

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

cc: J.R. Beckert
R.B. Dundas w/attach A & B
R.E. Champion w/attach A
S.C. Kologi w/attach A & B
Regional Forester-Missoula w/attach A
Forest Supervisor - Helena (w/attach A.

JOSEPH M. [illegible]

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

March 4, 1970

IN REPLY REFER TO:

Ref: Forest Highway Route 28
Helena - Elliston

Mr. Cliff Miller
U. S. Forest Service
Missoula, Montana 59801

Dear Mr. Miller:

In accordance with discussion, a brief review has been made relative to utilization of the existing alignment for the reconstruction of Forest Highway Route 28, between Helena and Elliston, as compared with a location through Priest's Pass. A location of this route through Priest's Pass would utilize a summit approximately 325 feet lower than would a route on the existing MacDonald Pass location.

The Priest's Pass route would be some 3 miles longer than the route via MacDonald Pass depending upon the actual alignment selected for each route.

It would be anticipated that construction costs incurred would tend to be proportional to the length of route as similar terrain is encountered for both locations. Thus, the Priest's Pass routing would probably require approximately 20% more funds than the MacDonald Pass routing for similar standards of construction. From visual observation, it is very possible that the actual length of the difficult terrain on the Priest's Pass Route exceeds the length of corresponding terrain on the MacDonald Pass Route. These factors were apparently recognized when the MacDonald Pass routing was selected for the highway in the 1930's and would be even more pertinent with today's design criteria.

The exposure factor would also appear to heavily favor the existing MacDonald Pass location.

On the MacDonald Pass location, the Forest Service campgrounds, the Frontier Town facilities, the Girl Scout Camp, microwave and radio towers, summer homes area, etc. may necessitate that this road would have to be maintained by the State in any event. In consideration of aesthetics, it

(continued on page 2)

JOSEPH M. NASS, CHAIRMAN
POPLAR
JOHN J. LEARY, VICE CHAIRMAN G. R. COONEY WILLIAM M. KESSNER H. S. HANSON JOHN D. WHEELER, SECRETARY

would appear that the MacDonald Pass location would be highly desirable since there are some excellent views available from the existing location. It would be anticipated that the views from the east slope of Priest's Pass would not be as desirable. It is also thought that an additional paved road through this area would not be desirable to the big game environment.

The estimates used todate for the reconstruction of this route have been based on upgrading of the existing alignment. If a new location was being utilized, these estimates would have to be considerably upgraded as a new alignment should be developed to utilize full standards if at all possible. In any event, the Priest's Pass routing would require a very large expenditure in a short period of time if any traffic was to be accommodated thereon, whereas short sections on the MacDonald route can be reconstructed to any acceptable standard and still accomplish the purpose for that section of the routing.

It would appear that there is very substantial justification for retaining the MacDonald Pass routing for this project utilizing the existing location with only minor modifications.

Information recovered from the Bureau of Public Roads' files by Mr. Roy Jones, Assistant Division Engineer, appears to be quite consistent with my thinking for this location.

If the Bureau of Public Roads and U. S. Forest Service desire further study, it is suggested that the Bureau of Public Roads update their comprehensive studies as furnished by Mr. Jones. Personally, I believe sufficient information is available to substantiate the PTW location.

Very truly yours,

LEWIS M. CHITTIM, P.E.
State Highway Engineer

By____________________
Jack R. Beckert, P.E., Assistant State
Highway Engineer - Engineering

JRB/be

Date Recd. Precons. 3-5-70
MAIL ROUTE
Initial
Attach
Info
Act
30 [illegible]
31 [illegible] Engineers
32 West Region
32 Schwieben
33 East Region
33 Wing
34 Hydraulics
35 Urban
36 Traffic
37 Pub. Hearing
38 Sec. Roads
39 Consultant Plans
Other
File

Letter

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

December 4, 1969

32-SCK
IN REPLY REFER TO:
F 249(21)
MacDonald Pass
East

08-24 DA

US Department of Transportation
Federal Highway Administration
Bureau of Bublic Roads
Helena, Montana 59601

Gentlemen:

Returned herewith are the Mylar manuscriptes furnished with your letter of November 25, 1969.

We have made reproducibles for our use.

Thank you.

Very truly yours,

32-GOP;SCK:gm

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

cc: J.R. Beckert
S.C. Kologi ✓

By Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

JOSEPH M. NASS, CHAIRMAN
POPLAR
JOHN J. LEARY, VICE CHAIRMAN G. R. COONEY WILLIAM M. KESSNER H. S. HANSON JOHN D. WHEELER, SECRETARY

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATI
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Road

MONTANA [illegible] COMMISSION
RECEIVED
NOV 25 1969
HELENA, MONTANA

DATE: November 25, 196

In reply refer to: 08-24-DA

TO : State Highway Commission
Helena, Montana 32:SCK

FROM : Grant E. Meyer, Division Engineer
Helena, Montana

SUBJECT: F 249(21)
McDonald Pass East

In response to your request of October 31, 1969 for Mylar reproducible maps for the subject project, we are sending you the original manuscripts.*

As soon as you have made a set of reproducibles for your use, please return the originals to this office.

* Enclosure

Act	Inf	
		RETURN TO M & F
		MAY BE RETAINED
		STATE HWY. ENGR.
		CHIEF COUNSEL
		ASST. S.H.E.-ADMIN.
		ACCOUNTING
		PLANNING SURVEY
		ASST. S.H.E.-ENGIN.
		BRIDGE
	✓	PRECONSTRUCTION
		RIGHT OF WAY
		ASST. S.H.E.-OPER.
		CONSTRUCTION
		MAINTENANCE
		MATERIALS
		OTHER

Date Recd. Preconst 11-25-69

Act	Info	
✓		West

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

November 6, 1969

32-SCK
IN REPLY REFER TO:

F 249(21)
MacDonald Pass East

U. S. Forest Service
200 East Broadway
Missoula, Montana 59801

Attention: Mr. Neal M. Rahm
Regional Forester

Gentlemen:

As per our 1967 Memorandum of Understanding we are hereby informing you that we are beginning our alignment studies for the reconstruction of US 12 on the east slope of MacDonald Pass.

The project will begin at the MacDonald Pass summit and extend easterly approximately 6½ miles. The tentative letting date is July '73.

A three lane facility is contemplated, two driving lanes and a climbing lane.

Enclosed are two 1"=1000'± autoscreen prints of the area indicating a preliminary alignment. You will note that the proposed improvement will generally follow the present highway but with some improvement in horizontal alignment.

Undoubtedly the alignment finally selected will vary considerably from that shown on the prints but it should still be in the general vicinity of the present highway.

As we proceed with our studies we will keep you advised of the latest developments however, it is hoped that the enclosed prints will suffice for your stage I multiple-use survey and impact report.

If there is anything further that we might be able to furnish at this time, please feel free to contact us.

32-GOP:SCK:sp

Very truly yours,

LEWIS M. CHITTIM, P.E.,
State Highway Engineer

By: Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

cc: J. R. Beckert
R. E. Champion
R. B. Dundas
S. C. Kologi ✓
Bureau of Public Roads

S. H. Comm.—Form 4-A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Grover O. Powers, P.E., Preconstruction Engineer
Date November 5, 1969

From Stephen C. Kologi, P.E., Regional Engineer - West
Subject: F 249(21)
MacDonald Pass East

This is to furnish a brief summary of the status of the subject project as we see it now.

The project will begin at the MacDonald Pass summit and extend easterly approximately 6½ miles, ending at the beginning of our proposed Helena West project about 2000 feet northeast of the Rimini turnoff.

For orientation purposes a 1" = 1000'± autoscreen print of the area is attached.

We have a set of prints of the alignment studies developed by the B.P.R.'s regional design office.

The B.P.R. used a 40 foot basic section and added a 12 foot climbing lane which gave a total width of 52 feet.

Based on the estimated design year ADT of about 3000, our standards call for a 44 foot roadway. Also, we would add a 12 foot climbing lane but as per "Blue Book" standards, we would reduce the shoulder width on that side to 4 feet. Thus our total width would be 50 feet.

The B.P.R. used a basic grade of 6% with a few short pitches slightly over that.

We will follow about the same grade line criteria. Probably we will let the grade get as steep as 7% where the horizontal alignment is good but hold the grade as flat as possible where the horizontal alignment is poor.

Following is a brief station by station narrative summary of the project:

STATION 250± to STATION 330±

This westerly 1½± miles of the project will essentially follow the present highway and will be relatively easy going compared to what will be encountered lower down Even though this is one of the easier portions of the project it will have it's problems such as providing a reasonably safe approach to "Frontier Town".

STATION 330± to STATION 380±

This is probably the roughest mile encountered on the project. Thru this area the B.P.R. studied two alternates. One about like we have shown on the attached print and other with considerably poorer horizontal alignment. We do not have their

(con't)

Avoid Verbal Instructions

cross-sections or quantity summaries so we cannot say for sure just how the alternates compared quantity wise. However, it does not appear to us that the poorer alignment would really save a lot of quantity. As we see it, the biggest advantage of their poorer alignment is that it does not have such severe problems with long sliver fills as does the good alignment.

After we have a complete geological investigation of the area and have proceeded further with our studies, the proper solution might become more evident.

STATION 380± to STATION 480±

This two mile section is also rough but not quite so bad as the one discussed above.

Here again, the B.P.R. studied two alternates, both of which achieved 50 m.p.h. design standards. In the vicinity of the horseshoe bend both of the B.P.R. alternates seemed to us to encounter tremendous grading quantities. Therefore, we feel that there might be some merit in using a 10° curve which would cut the design speed to about 45 m.p.h. but should save considerably on the grading and backslope scar.

Naturally a complete investigation will be required to determine just what might be saved and what we should do.

STATION 480± to STATION 585±

This easterly two miles of the project will essentially follow the present highway and will be relatively easy going.

We will use the B.P.R.'s mapping for our alignment studies and for preliminary design purposes. Following the preliminary plan-in-hand and approval of line and grade we will have the line staked and surveyed.

If you have no objections to our planning we will furnish Mr. O'Donnell sufficient autoscreen prints for distribution to the Highway Joint Development Council members so that the project can be discussed at the next meeting.

Stephen C. Kologi, P.E.,
Regional Engineer - West

32-SCK:sp

cc: J. R. Beckert w/print
R. B. Dundas w/print
R. E. Champion w/print
N. C. Sullivan w/print ✓

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

October 31, 1969

32-SCK
IN REPLY REFER TO

F 249(21)
MacDonald Pass East

U.S. Department of Transportation
Federal Highway Administration
Bureau of Public Roads
Helena, Montana 59601

Gentlemen:

We have one set of prints of your 1" = 100' contour mapping covering the subject projects.

However, for our location studies and design work it would be appreciated if you could furnish us a set of Mylar reproducibles of that mapping.

Or, if you could furnish us the original manuscripts we could reproduce them for our use and then return the originals to you.

32-GOP:SCK:sp

cc: J. R. Beckert ✓
S. C. Kologi ✓

Very truly yours,

LEWIS M. CHITTIM, P.E.,
State Highway Engineer

By: Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

RECEIVED
NOV 4 1969
HELENA, MONTANA

RETURN TO M & F
MAY BE RETAINED STATE HWY. FILES
CHIEF COUNSEL
ASST. S. H. E. ADMIN
ACCOUNTING
PLANNING SURVEY
ASST. S. H. E.
DESIGN
PRECONSTRUCTION
RIGHT OF WAY
ASST. S. H. E.
MAINTENANCE
MATERIALS
OTHER

222 S.W. Morrison Street
Portland, Oregon 97204

October 31, 1969

08-71.37

Mr. John H. Burton, Chief
Survey and Design Branch
Vancouver, Washington

John E. Mors, Chief
Federal Highway Projects Division
Portland, Oregon

Montana FH Route 28, MacDonald Pass

During my October 16 visit to Montana, Messrs. Meyer, Jones, Beckert and I discussed the need for the reconstruction of the subject route with the limited FH funds available to Montana each year; it was obvious that reconstruction of the entire route with FH funds was not feasible. Therefore, we agreed the Federal Highway Projects Division will design the section from the summit westerly. The State will design the section from the summit easterly.

Attached for your information is a copy of the October 22 Montana Highway Commission letter which gives their thinking regarding our alternates on the westerly slope and suggests we make a joint presentation of our projections to the Highway Joint Development Council. Please prepare a reply to this invitation. I feel we should join the State in this presentation but before we can be committed we would need to know what is required and when they propose to meet with the Council.

cc: Montana Division
✓State
Korff

Date Recd. Preconst. 11-5-69
Act | Info | MAIL ROUTE | Attach | Initial
Hearing
Roads
Consultant Plans

10-16-67
SCL

MacDonald Pass East	"L" Line	Alt 1
Clear & Grub	$280,000	$260,000
Grade	2,422,250	2,154,750
Drainage	37,104	37,104
Base & Surface	1,066,240	1,069,880
Guardrail	81 800	90,700
Structures ?	7,900	22,200
Misc.	98,000	77,000
	$3,993,294	3 711,634

"L" LINE		ALTERNATE LINE	
40+00 TO 42+00	Transition Rt	60+00 TO 62+00	Transition Rt.
42+00 TO 247+00	12' Climbing Lane Rt.	62+00 TO 247+00	Climbing Lane Rt
247+00 TO 249+00	Transition Rt & Lt	247+00 TO 249+00	Transition Rt & Lt
249+00 TO 254+00	12' Climbing & 12' Parking Lanes Rt & Lt	249+00 TO 254+00	Climbing & Parking Lanes Rt & Lt
254+00 TO 256+00	Transition Rt & Lt.	254+00 TO 256+00	Transition Rt & Lt
256+00 TO 430+00	11' Climbing Lane Lt Single Lane Rt	256+00 TO 436+50	Climbing Lane Lt. Single Lane Rt
430+00 TO 432+00	Transition Rt.	436+50 TO 438+50	Transition Lt.
432+00 TO 436+00	12' Climbing Lane Lt 12' Deceleration " Rt	438+50 TO 442+50	Climbing Lane Lt Deceleration " Rt.
436+00 TO 438+00	Transition Rt.	442+50 TO 444+50	Transition Rt
438+00 TO 569+00	Single Lane Rt 12' Climbing Lane Lt.	444+50 TO 569+00	Single Lane Rt Climbing Lane Lt.
569+00 TO 571+00	Transition Rt & Lt	569+00 TO 571+00	Transition Rt & Lt.
571+00 TO 575+00	30' Parking Rt & Lt	571+00 TO 575+00	30' Parking Rt & Lt.
575+00 TO 577+00	Transition Rt & Lt.	575+00 TO 577+00	Transition Rt & Lt
42+00 TO 254+00	Climbing Lane Rt.	62+00 TO 254+00	Climbing Lane Rt
249+00 TO 569+00	Climbing Lane Lt.	249+00 TO 569+00	Climbing Lane Lt.

S. H. Comm.—Form 4-A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Grover O. Powers, P.E., Preconstruction Engineer
Date September 17, 1969

From Jack R. Beckert, P.E., Assistant State Highway Engineer-Engineering
Subject: F 249( )
MacDonald Pass-East

Reference is made to your September 15, 1969 memorandum regarding the above-noted subject.

Please be advised that there are no funds in Financial District No. 8 for a companion project for the subject project; therefore, we are endeavoring to do what we can to approve the highway on this side of the pass.

In this regard, the Bureau of Public Roads has been requested to bring all available data in regard to the total desirable improvement so that we can determine if there is any feasibility of constructing a project of less than 11 miles which would be appropriate at this time.

Upon reviewing this matter with the Bureau of Public Roads on October 15, 16 and 17, 1969, I will contact you further in regard to this and other problems related to the Forest Highway Program.

Date Recd. Preconst. 9-18-69

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP | GBW | KMH		
		31 Office Engineers		
	✓	32 West Region		
		32 Schweyen		
		33 East Region		
		33 Wing		
		34 Hydraulics		
		35 Urban		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Plans		
		Other		
	✓	File		

Avoid Verbal Instructions

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To	Jack R. Beckert, P.E., Assistant State Highway Engineer - Engineering	Date	September 15, 1969
From	Grover O. Powers, P.E., Preconstruction Engr.	Subject:	F 249( ) MacDonald Pass E

We note that the new tentative five year primary program includes a project called MacDonald Pass East for July 1973.

It was our understanding that this was to be a Forest Highway Project and that the Bureau of Public Roads was currently working on the reconnaissance although we have not seen any of their studies or results.

However, we will be more than happy to proceed with this project but we must get started immediately if we are to meet the July 1973 letting date. If our recon photos aren't taken before the snow flies it will be next May or June before we can get started.

Working on a project called MacDonald Pass East would seem to limit us to tying into the P.T.W. at or near where the P.T.W. goes through the pass. Actually it seems to us that the problem is broader than that.

There is another pass some 3,500 feet south of the P.T.W. that might be lower and also would give some added length east of the summit for grade improvement.

In summary, we feel that we should have an 11+ mile P.E. program which would close the gap between F249(19) Avon-Elliston and F249(18) Helena West so that all alternates can be given proper consideration.

Your advice will be appreciated.

32-GOP:SCK;rh

cc: S. C. Kologi

Avoid Verbal Instructions

Grover O. Powers, P.E., Preconstruction Engineer

FEDERAL HIGHWAY ADMINISTRATION
FEDERAL HIGHWAY PROJECTS DIVISION
SURVEY & DESIGN BRANCH

RECONNAISSANCE STUDY

PHYSICAL CHARACTERISTICS

STATE: Montana ROUTE: McDonald Pass

SECTION: 2 miles East of Elliston to Sweeny Creek

FOREST: Helena National Forest

DATUM: Aerial Survey - 1":100' - 5' Contour Interval

PREPARED BY: T. J. Hildreth DATE: 9/29/69

ITEM	L-line West	Alt. 1 West		L-line East	Alt. 1 East
LENGTH IN MILES	4.68	4.94		6.89	6.99
TOTAL CENTRAL ANGLE	511°16'	564°06'		653°51'	989°09'
TOTAL NUMBER OF CURVES	10	10		13	21
MAXIMUM CURVE	6°	6°		7°30'	7°30'
NUMBER OF MAXIMUM CURVES	4	3		2	2
MAX. CENTRAL ANGLE, I CURVE	81°16'	103°35'		187°24'	210°21'
MAXIMUM GRADE	6%	6%		6.24%	6%
LENGTH OF MAXIMUM GRADE	14,300'	8750'		2500'	31,558'
TOTAL RISE AND FALL	1191'	1191'		1945'	1945'
HIGHEST GRADE ELEVATION	6324'	6324'		6324'	6324'
LENGTH OF GRADE OVER 5 %	19,393'	19,010'		31,966'	31,558'

DESIGN PROPOSAL

ROUTE: McDonald Pass PROJECT NO: Montana 28

ROUTE OR PROJECT LOCATION Elliston to McDonald Pass Summit

Sections 2, 3, 4, 5, and 6, Township 9 North, Range 6 West, MPM

NATIONAL FOREST Helena National Forest

COUNTY: Powell County

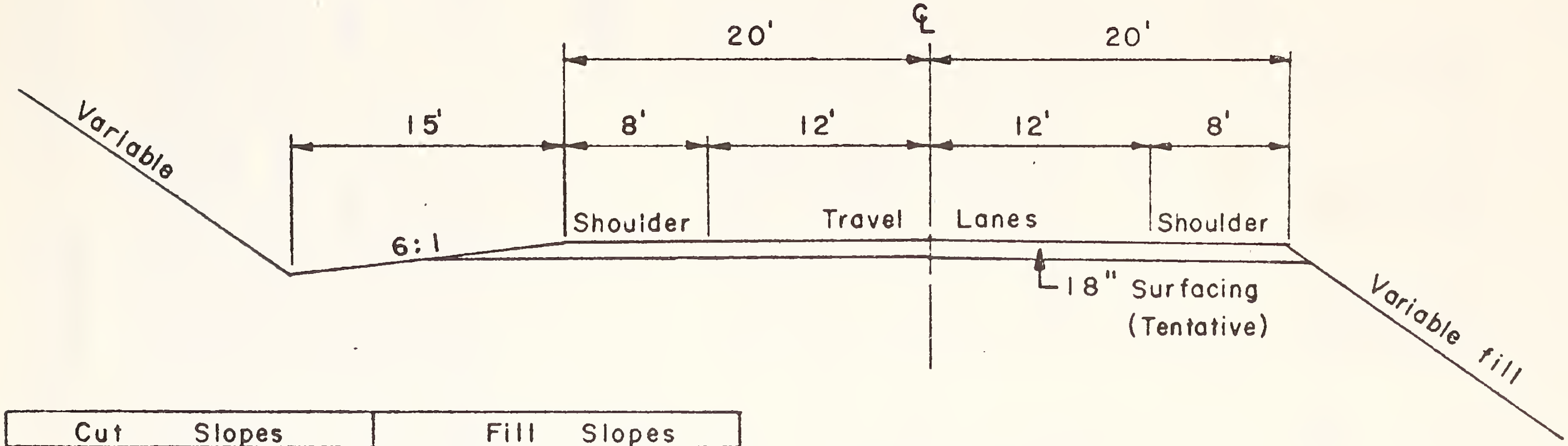
TYPE OF WORK: Grading, base, and surfacing

DESIGN CRITERIA

Maximum Grade	6%
Maximum Horizontal Curve	7°30'
Passing Sight Distance	350'
Stopping Sight Distance	1,800
Design Speed	50 M.P.H.
Maximum Superelevation	0.08 (AASHO Tables)
Superelevation Run-off Length	200' Min.
Access Control	None

TRAFFIC COUNT

Type:	ADT	ADT	DHV	% T DHV	% D	% T ADT	Eq. 18K SAL
Year:	1966	1986	1986			15	
Number:	1250	2500	380			15	



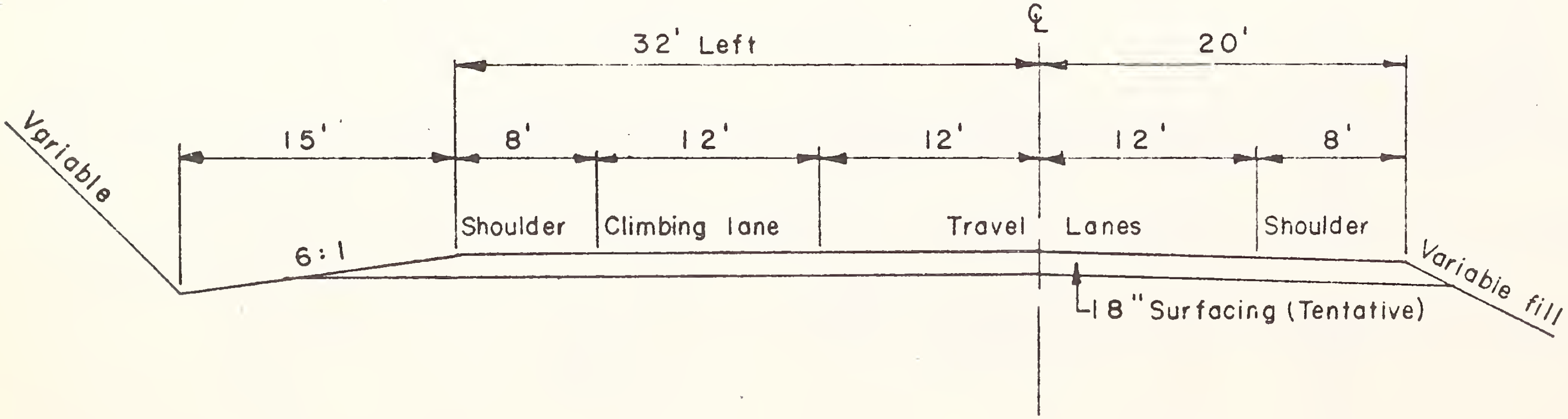
Cut	Slopes	Fill	Slopes	
0' - 5'	5:1	0' - 5'	6:1	6:1
5' - 10'	3:1	5' - 10'	6:1	4:1
10' - 15'	2:1	10' - 15'	4:1	3:1
15' - 20'	$1\frac{1}{2}:1$	15' - 20'	4:1	2:1
20' & over	1:1	over 20'	2:1	$1\frac{1}{2}:1$
			Perfered min.	

"L" Line
10 + 00 - 40+00

Alt. 1
10+00 - 60+00

TYPICAL ROADWAY SECTION

MONTANA F.H. RTE. 28

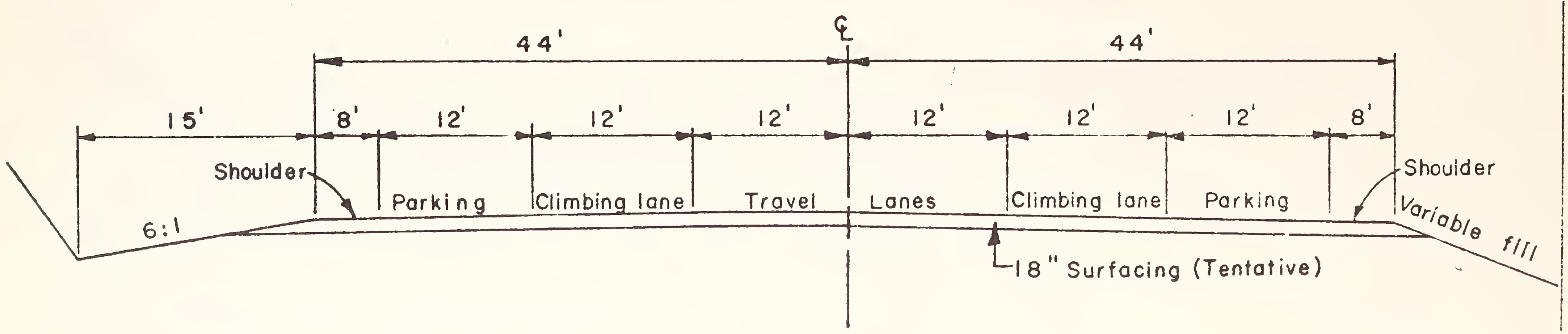


"L" Line 256+00 - 259+00

Alt. 1 256+00 - 259+00

TYPICAL ROADWAY SECTION

MONTANA F.H. RTE. 28



Alt. I & "L" Line 249+00 to 254+00
Taper 247+00 - 249+00 & 254+00 - 256+00
Climbing lane & Parking (Both sides)

TYPICAL ROADWAY SECTION

MONTANA F.H. RTE. 28

April 15, 1957

Mrs. John J. Baucus, Chairman
Camp Thunderbird Development Com.
Helena, Montana

Dear Mrs. Baucus:

The map sent you by Mr. Flint shows the latest available information on the proposed improvement of the McDonald Pass Highway.

It is not anticipated any material changes will be made in the location of the highway in the vicinity of Thunderbird Camp. It is most likely the grade will be somewhat higher and fill slopes may extend slightly further down the hillside than at present. You may be assured clearing of timber will be kept at a minimum and every effort will be made to avoid any possible damage to the natural surroundings near the camp site.

There was some discussion of relocating the highway further east, eliminating the "horse-shoe" curve referred to in your letter. Upon investment it was found to be impossible to construct this line due to excessive grade descending from the "horse-shoe" curve to the reservoir.

The right of way width will most likely be a minimum of 80 feet each side of centerline with additional width as required to accommodate both fill and cut slopes. The actual width is not possible to determine until design of the project is complete.

This project is not presently included in the tentative program covering the next three years. Actual advancement to construction is dependent upon future program action and on funds that may be available.

We appreciate your interest and will be glad to furnish additional information as it becomes available.

Very truly yours,

W. B. HUFFINE
District Engineer

LED:cw

INTRODUCTION:

The MacDonald Pass Forest Highway Project, of which Section 28-B is a unit, extends from Dog Creek near Elliston, Powell County, State of Montana, to Ten Mile Creek in Lewis and Clark County. Project 28-B is located within and adjacent to the Helena National Forest. The western terminus at Survey Station 77+10 is on the eastern slope of the Rocky Mountains, in Section 36, T. 9 N., R. 6 W., M.P.M. and the eastern terminus is at Survey Station 781+08, in Section 34, T. 10 N., R. 5 W., M.P.M. It is a part of the Federal Highway System known as U.S. No. 10 N and locally as the National Parks Highway.

The MacDonald Pass route was used in the early mining days of Montana, being constructed in the early sixties as a toll road and of a type in mode at that time, following the lines of least resistance. It existed as such for a long term of years until two other roads, known as the Priest Pass Road and Mullan Pass Raod were constructed over adjacent passes to the north.

With the rerouting of the highway by the construction of the MacDonald Pass route, the highway mileage was shortened by three and ten miles respectively over the other two routes, tortuously winding up the mountainside with their sharp curves and steep grades.

The pioneers of the early days were elated in being upheld in their belief that the MacDonald Pass route was the most feasible one on which to build. In many instances the judgment of the pioneer locators of the old freight roads has been upheld in having Federal Aid and Forest Highways later follow their general routings on greatly improved standards.

HISTORY:

In 1927 a reconnaissance survey was made by N. F. McCoy of the Bureau of Public Roads, in company with a member of the Montana State Highway Commission, of the three passes over the Continental Divide, namely the Mullan Pass, Priest Pass and MacDonald Pass, and it was jointly agreed that the MacDonald Pass was the proper routing for a permanent highway.

In 1929 a preliminary survey was made by Mr. J. M. Mayers over the Mike Renig Creek route from Elliston through MacDonald Pass and connecting with the Priest Pass road at Ten Mile Creek.

Letters of cooperation were executed March 26, 1931, to use funds in the amount of $183,200.00 Forest Highway funds, which allotment had been approved by the Secretary May 1, 1931.

SURVEY, PLANS & ESTIMATE:

In the year of 1930 a revised location of the entire route was made by Mr. B. F. Kitt, using MacDonald Creek route through MacDonald Pass from Elliston to Ten Mile Creek. The 1929 location was limited to a 5% grade while the revised survey of 1930 was allowed a maximum 6% grade.

Route A through MacDonald Pass and route B through Priests Pass were developed to ease grade and alignment over the Continental Divide. Route A is approximately 18 miles long and utilized four miles of the existing highway, requiring 14 miles of construction on new location. Route B follows the present highway for only one mile, requiring 19 miles of construction on new location. Route C-A, which crosses the Divide south of MacDonald Pass, was located in an attempt to shorten the length of new construction. The section of this route which lies east of the Divide has generally poor exposure and sustained grades approximately six percent. Route C-A requires 12 miles of construction on new location, and six of its 18 miles are along the present road. Four other route alternatives are comprised of parts of routes A, B, and C-A, and section D and Section E.

As a means of comparing one alternative with another, benefit ratios were developed, using as a guide "A Policy on Road User Benefit Analyses for Highway Improvements", approved in May, 1952, by the Committee on Planning and Design Policies of the American Association of State Highway Officials. From this analysis it was determined that, in a road-user benefit sense, construction on any one of the seven alternatives cannot be justified for present traffic or any foreseeable increased traffic. Realignment of the present road and introduction of sections on new location to reduce curvature and grades are a more feasible solution.

With these facts in mind, Sections F and G were located for combination with the western part of route A and also with Section C-E to form four additional routes, and make a total of eleven alternatives. Section C-E, extending from the western terminal point to the junction with route A, is six miles long and one mile longer than the section of route A between the same points. The topography section C-E traverses makes possible the attainment of better grades, and equivalent or better curvature, than the comparable section of route A to the MacDonald Pass. Eastward from the Pass a 2.5 mile portion of Section F lies along the present road, and the remainder is on new location. The portion on new location contains better curvature and less steep grades than are obtainable should improvement be restricted to the present road with its 10 and 12 degree curves. Section G departs from Section F with the same purpose of attaining better grades and alignment than offered by the present road or the alternative portion of Section F.

Section C-E and the section of route A west of MacDonald Pass in combination with Section F and Section G and extensions on route C-A to the eastern terminal point make the four additional alternate routes. These routes contain less mileage on new location than the other seven; accordingly, benefit ratios indicate they are justifiable. It is recommend that further consideration be given to Section C-E versus the western part of route A, and Section G versus the alternative portion of Section F. It is likely that a preliminary survey will have to be made of each of these alternatives and designs completed before final choice can be determined between Section C-E and Section A, and between Sections G and F.

The aerial photographs showing the routes and a line diagram index of the photographs have been copied by our photographic laboratory here in Washington. Two copy prints of each are transmitted under separate cover for guidance in preliminary surveys, and as an aid in making final decision on the best route. Additional prints may be obtained from the copy negatives which will be retained on file in the Washington office.

COPY

FLINT
CARLSON
DURFEY
[illegible]
FILE

To: Mr. F. E. Andrews, Division Engineer
Portland, Oregon

Dec. 14, 1955

From: A. C. Clark, Deputy Commissioner
Washington, D. C.

Subject: Routes Located by Aerial Methods--Montana FHP L.S.28.1,
MacDonald Pass

In response to the request made by Mr. Morton M. Flint, District Engineer, Bureau of Public Roads Montana District, an aerial reconnaissance survey has been completed to determine new route possibilities for a 16-mile section of Montana Forest Highway Route 28 in the MacDonald Pass area. This survey was undertaken to substantiate oral reports received by Mr. Flint that feasible route locations better than the one on which the existing highway was constructed lie either to the north or south of MacDonald Pass. Approximately 70 miles of route alternatives on new location were determined to be certain that no possibilities were overlooked. The routes were drawn on the aerial photographs in stereoscopic correspondence.

Two passes were found in the vicinity of MacDonald Pass, one of which is Priests Pass at the head of Spring Creek north of MacDonald Pass, and the other is an unnamed pass which lies a short distance to the south of MacDonald Pass at the head of Walker Creek. Comprehensive examination of the aerial photographs failed to disclose any additional passes through which feasible route alternatives might be projected, either to the north or to the south of MacDonald Pass.

Each alternative originates on Montana Forest Highway Route 28, U. S. 10N, at the crossing of the Little Blackfoot River near Elliston, and terminates on the same highway in the SW 1/4 of Section 28, T. 10N., R. 4W. Three through routes, A, B and C-A, were detetermined. Subsequently, connecting sections on new location combined with portions of these three made eight other alternatives and a total of eleven alternate routes. The routes, identified by letter combinations, and their approximate lengths, as determined from the aerial photographs are as follows:

	Route	Total Mileage	New Location Mileage
Mc Donald –	A	18	14
Priest –	B	20	19
south of McDonald →	C-A	18	12
	C-D-C-A	18	14
	C-E-A	19	17
	C-E-A-E-B	20	20
	A-E-B	19	17
	A-F-C-A	17	6
	C-E-A-F-C-A	18	9
	A-F-G-C-A	17	9
	C-E-A-F-G-C-A	18	11
	Existing Highway	16	0

(more)

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
WASHINGTON 25

IN YOUR REPLY PLEASE
REFER TO FILE NO. CH-1.1

October 18, 1954

FLINT
[illegible]
RANGER
[illegible]
FILE

Mr. Martin M. Flint
District Engineer
Bureau of Public Roads
341 Federal Building
P. O. Box 1386
Missoula, Montana

Dear Mr. Flint:

Herewith are stereoscopic pairs and single photographs taken of MacDonald Pass Road and vicinity while we were there on September 23, 1954. I trust they will be of value and interest to you. A description of each photograph is given on the attached sheet.

As yet, I have not had time to check on the availability of photography for the MacDonald Pass region from all agencies in Washington. I have, however, searched for photography coverage at the Army Air Force Library and, unfortunately, the Air Force does not have any vertical photography available. They do, however, have obliques which might be of value; consequently, I have ordered copies printed.

As soon as time from other work permits, I will make inquiries at other agencies and report to you.

Very truly yours,

William T. Pryor

William T. Pryor
Chief, Photogrammetry
and Aerial Surveys

Enclosures

Description of Photographs of MacDonald Pass Region
(About 15 miles west of Helena, Montana)

Number	Date	Description
AS54.64 & .65	9/23/54	Stereo. pair. Northeast from MacDonald Pass on U. S. 10 about 18 miles west of Helena, Montana
AS54.66 & .67	9/23/54	Stereo. pair. East along U. S. 10 about 17-1/2 miles west of Helena, Montana and 1/4 to 1/2 mile east of MacDonald Pass.
AS54.68 & .69	9/23/54	Stereo. pair. East on U. S. 10 from Overlook 15 miles westof Helena, Montana
AS54.70 &.71	9/23/54	Stereo. pair. East across valley toward Helena, Montana, and east foot of MacDonald Pass near beginning of Forest Highway Route through Helena National Forest from Overlook 15 miles west of Helena.
AS54.73	9/23/54	East on U. S. 10 toward summit at MacDonald Pass. Tower in upper right is summit at MacDonald Pass.
AS54.74 & .75	9/23/54	Stereo. pair. East along proposed Helena National Forest Highway Route alternative from mileage 35221.5 near west foot of MacDonald Pass. Scar seen in photos. is buried oil line. Tower at MacDonald Pass summit appears in top right of photos.
AS54.76 & .77	9/23/54	Stereo. pair. East from Overlook on U. S. 10 about 15 miles west of Helena, Montana toward east foot of MacDonald Pass. Mileage 35,229.3.
AS54.78	9/23/54	West on U. S. 10 from Overlook about 15 miles west of Helena, Montana. Mileage 35,229.3.
AS54.79 & .80	9/23/54	Stereo. pair. East along U. S. 10 from mileage 35229.3.
AS54.81 & .82	9/23/54	Stereo. pair. Northeast from Overlook on U. S. 10 toward hairpin turn in existing road, showing character of timber cover. Mileage 35,229.5.

STATE: MONTANA
FOREST HIGHWAY ROUTE: 28
McDONALD PASS NATIONAL
FOREST HIGHWAY

FOREST HIGHWAY

MEMORANDUM OF AGREEMENT

* * * *

AERIAL SURVEY AND PREPARATION OF TOPOGRAPHIC MAP FOR LOCATION SURVEY OF McDONALD PASS FOREST HIGHWAY ROUTE 28

THIS MEMORANDUM OF AGREEMENT, made this 4th day of August, 1954, between the Forest Service, Department of Agriculture, hereinafter called the "Forest Service" and the Bureau of Public Roads, Department of Commerce, hereinafter called "Public Roads".

WHEREAS; It is the desire of Public Roads to have an aerial survey made of the McDonald Pass, Montana Forest Highway Route 28 in Lewis and Clark and Powell Counties for the purpose of preparing a new design and estimate of cost for reconstruction of this route, and

WHEREAS: The Forest Service has the necessary plant and personnel qualified to perform this work,

THEREFORE, it is mutually agreed as follows:

1. The Forest Service will photograph an area covering the present road over McDonald Pass of adequate coverage to permit the preparation of a map showing the topography a distance of 750 feet on each side of the present road, starting in Section 6, T.9N., R.6W., and ending in Section 35, T.10N., R.5W., with two alternate routes through Sections 6, 5 and 4, T.9N., R.6W., and through Sections 29, 28, 34 and 35, T.10N., R.5W., more specifically detailed on map attached and made part of this agreement.

2. The Forest Service will use the Specifications for Aerial Photography and Topographic Mapping for Photogrammetric Methods for Highway Route Location as issued by the Department of Commerce, Bureau of Public Roads, Division Eight, dated May, 1954, as a guide in the execution of this agreement insofar as they are applicable and in accord with the established procedures usually employed in aerial photography and map preparation.

3. The Forest Service will furnish all labor, equipment, material and supplies for the work herein provided and will supervise and direct the work. under the authority cited in Section 601 of the Economy Act.

General items of expense covering clerical, fiscal and supply services directly chargeable to the work but not readily capable of itemization will be reimbursed to the Forest Service in a lump sum based on seven (7) per cent of the actual costs incurred hereunder in accordance with the usual Forest Service accounting procedure. Equipment rental rates will include depreciation, covering replacement only, and repairs.

4. The Public Roads will furnish the Forest Service with such survey data as may be available for establishment of ground controls and other ties as required. The Public Roads will also assist in supplying such equipment and personnel as may be available in the prosecution and expediting of the work.

5. The Forest Service will prepare a line index of all photographs on a regular Forest Service map. Copy shall be made available to Public Roads for their records. The Forest Service will file all negatives and will furnish such additional prints to Public Roads as may be required, upon proper purchase requisition.

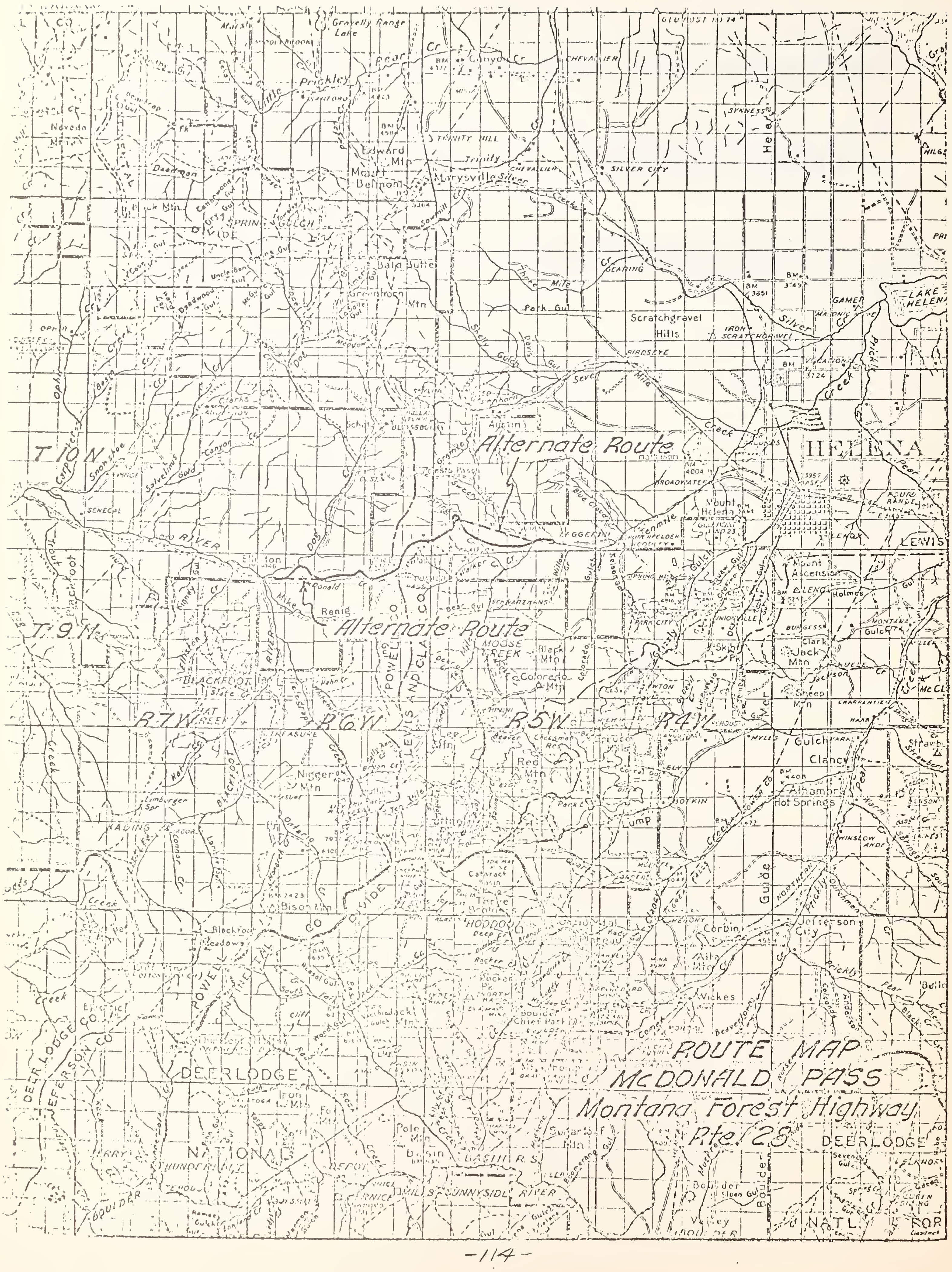
6. The Forest Service will prepare and furnish Public Roads with a topographic map, on a scale 1" = 100', as required under Item 40 of the specifications. In addition, they will furnish one complete set of photographs of the area covered by this agreement.

7. The Public Roads will make such field checks as may be necessary to determine the accuracy of the map as furnished. The Forest Service will assist and furnish such supplementary information as may be deemed necessary to complete the map insofar as the data available will permit.

8. The Public Roads will reimburse the Forest Service for all costs incurred under this agreement provided that the total obligations hereunder on the part of Public Roads shall not exceed $10,000.00. It is agreed that Public Roads will make prompt payment for all costs as the work progresses

upon submission of proper vouchers by the Forest Service.

Department of Commerce BUREAU OF PUBLIC ROADS	Department of Agriculture FOREST SERVICE, REGION 1
By /s/ F. E. Andrews Acting Division Engineer	By /s/ H. R. Jones ActingRegional Forester



ROUTE MAP
McDONALD PASS
Montana Forest Highway
Rte. 28

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
222 S. W. Morrison Street
Portland, Oregon

DATE: September 30, 1969

In reply refer to: 08-72.374

TO :Mr. G. E. Meyer, Division Engineer
Helena, Montana

FROM :J. E. Mors, Chief
Federal Projects Division
Portland, Oregon

SUBJECT:Montana F. H. Route 28, McDonald Pass Highway,
Elliston to Sweeny Creek.

Per your request, we are sending you under separate cover the following data for the subject project:

✓1. 2 prints each - detail map for Alternate 1 West Design - Stations 10+00 to 112+00.

✓2. 2 prints each - detail map for L-line West Design - Stations 10+00 to 250+00 and Alternate 1 West Design - Stations 112+00 to 250+00.

✓3. 2 prints each - detail map for L-line and Alternate 1 line East Design - Stations 240+00 to 400+00.

✓4. 2 prints each - detail map for L-line and Alternate 1 line East Design - Stations 400+00 to 615+17.

✓5. 2 prints each - typical sections for L-line and Alternate 1 lines East and West Design - Stations 10+00 to 615+17.

✓6. 2 prints each - profile for L-line and Alternate 1 line West Design - Stations 10+00 to 260+00.

✓7. 2 prints each - profile for L-line and Alternate 1 line East Design - Stations 260+00 to 615+17.

✓8. 2 prints each - preliminary engineer's estimate for L-line East Design.

✓9. 2 prints each - preliminary engineer's estimate for Alternate 1 line East Design.

- more -

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

✓10. 2 prints each - preliminary engineer's estimate for L-line West Design.

11. 2 prints each - preliminary engineer's estimate for Alternate 1 West Design.

✓12. 2 prints each - Reconnaissance Study - physical characteristics.

cc: separate cover ✓

TJHildreth:ts

Vancouver Design Stencil #29 L Line (East of Summit)
June 1967

Preliminary
ENGINEER'S ESTIMATE
(Continuation Sheet)

Route Mont 28 Section MacDonald Pass

* Major Items

Total Contract Construction		$ 3,973,294.00 +
Engineering	+25% ±	$ 993,706.00
Contingencies (BLM & FDR)		$
Striping ______ miles at $150.00 per mile NPS		$
Signing ______ miles at $300.00 per mile NPS		$
	Subtotal	$
		$
TOTAL ESTIMATED COST		$ 4,967,000.00 +
Program Amount (NPS)		$

Station: 257+00 to Station 615+17

Station: ______ to Station ______

Length: 6.8907 Miles

Width: 40'

Type:

Surfacing:

June, 1967

U. S. DEPARTMENT OF TRANSPORTATION
Bureau of Public Roads
Region 8

ENGINEER'S ESTIMATE

Made by:
Date: [illegible]
Checked by:
Date:
Revised by:
Date:

Route:
Section
County:
State:
BLM District
Forest
Park

Item No.	Item	Quantity	Unit	Unit Price	Amount
10	Extra and misc. work	All Req'd		Cont. Sum	39,000
100(1)	Clearing		Acre		
100(2)	Grubbing		Acre		
100(3)	Clearing and grubbing	140	Acre	2000	280,000
100(4)	Pit clearing and grubbing		Acre		
100(5)	Clearing and grubbing		Lump Sum		
100(6)	Clearing (special)		Lump Sum		
100(7)	Preparation of stockpile areas		Acre		
100(8)	Advance clearing		Acre		
101(1)	Selective removal of trees and snags		Sq.ft.		
101(8)	Selective falling of trees and snags		Sq.ft.		

Vancouver Design Stencil #2
Revised July, 1968

Route [illegible]

ENGINEER'S ESTIMATE
(Continuation Sheet)

Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
102(1)	Unclassified excavation	1931,000	Cu.yd.	1.10	2,124,100.00
102(4)	Borrow excavation, Case 1		Cu.yd.		
102(6)	Selected borrow, topping, Case 1		Cu.yd.		
102(8)	Stripping borrow pits, Case 1		Cu.yd.		
102(9)	Furrow ditches		Lin.ft.		
102(10)	Rounding slopes ( )		Lin.ft.		
102(11)	Unclassified excavation (station basis)		Station		
102(13)	Stripping pits and quarries		Cu.yd.		
102(18)	Rounding cut slopes	41,000	Lin.ft.	0.25	10,250.00
103(1)	Excavation for structures	300	Cu.yd.	10.00	3,000.00
103(2)	Excavation for structures (bridges)		Cu.yd.		
103(3)	Foundation fill		Cu.yd.		
103(9)	Excavation for structures (foundation trench)		Cu.yd.		
104(1)	Special subbase, grading		Cu.yd.		
104(2)	Special subbase, grading		Ton		

Vancouver Design Stencil #3
Revised October 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route_______________ Section_______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
105(1)	Station yard overhaul		Sta.yd.		
105(2)	Yard mile overhaul	713,000	Yd.mi.	$0.30	$213,900.00
105(3)	Overhaul of borrow, Case 1		Yd.mi.		
105A(1)	Station yard haul		Sta.yd.		
105A(2)	Yard mile haul		Yd.mi.		
105A(3)	Haul of borrow, Case 1		Yd.mi.		
107(1)	Finishing previously constructed roadbed		Mile		
107(2)	Finishing previously constructed roadbed		Station		
108(1)	Watering	37,000 ✓	M Gal. Unit	2.00	74,000.00
108(4)	Emulsified asphalt, grade		Ton		
109(1)	Rolling (roller)		Hour		
111(1)	Obliteration of old roadways		Unit		
112(1)	Roadside cleanup		Acre		
150(1)	Logging roads	All req'd	Lump Sum		
105(1)	Logging roads	All req'd	Lump Sum		

Vancouver Design Stencil #4
Revised October 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
200(1)	Gravel base, grading ______		Cu.yd.		
200(2)	Gravel base, grading ______		Ton		
200(4a)	Crushed aggregate base, grading C	✓ 181,000	Ton Cu.yd.	2.80	506,800.00 ✓
200(4b)	Crushed aggregate base, grading D	✓ 58,500	Cu.yd. Ton	2.90	169,650.00 ✓
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
201(1)	Reconditioning of roadbed		Mile		
202(1)	Patching pavement		Sq.yd.		
217(1)	Bituminous plant-mix base		Ton		
220(1)	Bituminous concrete base		Ton		
220( )	Asphalt cement, penetration ______		Ton Gallon		
230(1)	Plain portland cement concrete base		Sq.yd.		
230(2)	Reinforced portland cement concrete base		Sq.yd.		

Vancouver Design Stencil #5
Revised November, 1963

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________

Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
300( )	Gravel surface course, grading ____		Ton Cu.yd.		
300( )	Crushed aggregate surface course, grading ______		Ton Cu.yd.		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
310(4)	Asphalt, grade MC-250, prime coat	300	Gallon Ton	65^{00}	$19,500^{00}$
310(10)	Blotter material, prime coat	1860	Cu.yd. Ton	4^{00}	7440^{00}
311(1)	Emulsified asphalt, grade SS- 1 , tack coat	50	Gallon Ton	65^{00}	$3,250^{00}$

Vancouver Design Stencil #8
Revised October, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ________________ Section ________________

Item No.	Item	Quantity	Unit	Unit Price	Amount
316( )	Road-mix surfacing laid, Case		Mile Sq.yd.		
316( )	Road-mix aggregate,		Cu.yd. Ton		
316( )	Asphalt grade __________, road-mix		Gallon Ton		
316(11)	Placing bituminous road-mix surfacing on road approaches		Each		
317(1)	Plant mixture	39,000	Ton	6.50	253,500.00 ✓
317(3)	Asphalt cement, __________ penetration, plant mix	2340	Gallon Ton	45	105,300.00 ✓
317(6)	Plant mixture (including asphalt cement & mineral filler)		Ton		
317(7)	Placing plant mixture on road approaches	8	Each	100	800.00 ✓
318(1)	Bituminous premix		Ton		
330(1)	Reinforced portland cement concrete pavement		Sq.yd.		
330(2)	Plain portland cement concrete pavement		Sq.yd.		

Vancouver Design Stencil #10
Revised October, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____/____ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
406(1)	Class A concrete	35	Cu.yd.	100.00	3500.00
406(1)	Class A concrete (Substructure)		Cu.yd.		
406( )	Class concrete		Cu.yd.		
406(9)	Reinforced concrete headwall, Type , for culvert pipe		Each		
406(10)	Reinforced concrete headwall for pipe arch, span, rise		Each		
406(11)	Class A concrete (Superstructure)		Lump Sum		
406(14)	Reinforced concrete headwall for Twin _____ inch culverts		Each		
406(15)	Reinforced concrete headwall for Twin pipe arch, _____span,_____rise		Each		
406A(2)	Prestressed concrete (girders, beams), foot span		Each		
406A(3)	Prestressed concrete superstructure, _____ foot span		Each		
406B(1)	Pneumatically applied Mortar blanket		Cu.yd.		
407(1)	Reinforcement steel	7000	Pound	0.20	1,400.00
407(3)	Wire mesh reinforcement		Pound		

Vancouver Design Stencil #14
June, 1967

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
453(1)	24" inch 16 gage galv. corr. metal pipe, or equal as listed	3500	Lin.ft.	6^{00}	$21000.00
453(1)	30" inch 16 gage galv. corr. metal pipe, or equal as listed	1000	Lin.ft.	7^{00}	7,000.00
453(1)	36" inch 14 gage galv. corr. metal pipe, or equal as listed	472	Lin.ft.	12^{00}	5,664.00
453(1)	72" inch 12 gage galv. corr. metal pipe, or equal as listed	86'	Lin.ft.	40	3,440.00
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				

Vancouver Design Stencil #26
March, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet).

Route______________________ Section_______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
583(3)	Galvanized beam-type guardrail 12'-6" spacing		Lin.ft.		
583(4)	Galvanized beam-type guardrail ~~6'-3" spac~~ing	17,650	Lin.ft.	4.00	70,600.00
583(5)	Beam-type guardrail, weathering steel, 12'-6" spacing		Lin.ft.		
583(6)	Beam-type guardrail, weathering steel, 6'-3" spacing		Lin.ft.		
583(7)	Anchors for Beam-type guardrail	56	Each	200.00	11,200.00
584(1)	Removing and resetting guardrail		Lin.ft.		
585(1)	Removing and stockpiling salvaged guardrail		Lin.ft.		
586(1)	Removing and disposing of existing guardrail		Lin.ft.		
587(1)	Removing and disposing of existing cattle guards		Each		
590(1)	Furnishing & placing topsoil		Cu.yd.		
590(2)	Placing topsoil		Cu.yd.		
591(1)	Seeding, fertilizing & mulching (furnished and applied)	3900	1,000 Sq.ft.	10.00	39,000.00
591(2)	Seeding only (furnished and applied)		1,000 Sq.ft.		
591(3)	Jute mesh (furnished and applied)		1,000 Sq.ft.		
594(1)	[illegible]		1,000 Sq.ft.		

Alt 1 (East of Summit)

Vancouver Design Stencil #29
June 1967

Preliminary

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route Mont 28 Section MacDonald Pass

* Major Items

Total Contract Construction $3,711,634.00

Engineering +25%± $928,366.00

Contingencies (BLM & FDR) $

Striping ______ miles at $150.00 per mile NPS $

Signing ______ miles at $300.00 per mile NPS $

Subtotal $

$

TOTAL ESTIMATED COST $4,640,000

Program Amount (NPS) $

Station: 359+00 to Station 615+17

Station: ______ to Station ______

Length: 6.9886

Width: 40

Type:

Surfacing:

Vancouver Design Stencil #1
June, 1967

U. S. DEPARTMENT OF TRANSPORTATION
Bureau of Public Roads
Region 8

ENGINEER'S ESTIMATE

Made by:
Date: 2/6/69
Checked by:
Date:
Revised by:
Date:

Route: [illegible]
Section [illegible]
County:
State:
BLM District
Forest
Park

Item No.	Item	Quantity	Unit	Unit Price	Amount
10	Extra and misc. work	All Req'd.		Cont. Sum	370[illegible]
100(1)	Clearing		Acre		
100(2)	Grubbing		Acre		
100(3)	Clearing and grubbing	130	Acre	200^{00}	260000.00
100(4)	Pit clearing and grubbing		Acre		
100(5)	Clearing and grubbing		Lump Sum		
100(6)	Clearing (special)		Lump Sum		
100(7)	Preparation of stockpile areas		Acre		
100(8)	Advance clearing		Acre		
101(1)	Selective removal of trees and snags		Sq.ft.		
101(8)	Selective falling of trees and snags		Sq.ft.		

Vancouver Design Stencil #2
Revised July, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ______________________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
102(1)	Unclassified excavation	1,565,000	Cu.yd.	1.45	$1,974,250^{00}$
102(4)	Borrow excavation, Case 1		Cu.yd.		
102(6)	Selected borrow, topping, Case 1		Cu.yd.		
102(8)	Stripping borrow pits, Case 1		Cu.yd.		
102(9)	Furrow ditches		Lin.ft.		
102(10)	Rounding slopes ( )		Lin.ft.		
102(11)	Unclassified excavation (station basis)		Station		
102(13)	Stripping pits and quarries		Cu.yd.		
102(18)	Rounding cut slopes	38,000	Lin.ft.	0^{25}	9500^{00}
103(1)	Excavation for structures	1000	Cu.yd.	10^{00}	10000.00
103(2)	Excavation for structures (bridges)		Cu.yd.		
103(3)	Foundation fill		Cu.yd.		
103(9)	Excavation for structures (foundation trench)		Cu.yd.		
104(1)	Special subbase, grading ________		Cu.yd.		
104(2)	Special subbase, grading ________		Ton		

Vancouver Design Stencil #3
Revised October 1963

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route________________ Section________________

Item No.	Item	Quantity	Unit	Unit Price	Amount
105(1)	Station yard overhaul		Sta.yd.		
105(2)	Yard mile overhaul	460000	Yd.mi.	0.30	138000.00
105(3)	Overhaul of borrow, Case 1		Yd.mi.		
105A(1)	Station yard haul		Sta.yd.		
105A(2)	Yard mile haul		Yd.mi.		
105A(3)	Haul of borrow, Case 1		Yd.mi.		
107(1)	Finishing previously constructed roadbed		Mile		
107(2)	Finishing previously constructed roadbed		Station		
108(1)	Watering	14000	M Gal. Unit	2^{00}	$28,000^{00}$
108(4)	Emulsified asphalt, grade		Ton		
109(1)	Rolling (roller)		Hour		
111(1)	Obliteration of old roadways		Unit		
112(1)	Roadside cleanup		Acre		
150(1)	Logging roads	All req'd	Lump Sum		
105(1)	Logging roads	All req'd	Lump Sum		

Vancouver Design Stencil #4
Revised October 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
200(1)	Gravel base, grading ______		Cu.yd.		
200(2)	Gravel base, grading ______		Ton		
200(4a)	Crushed aggregate base, grading C	181 500 ✓	Ton Cu.yd.	2^{80}	$508,200^{00}$ ✓
200(4b)	Crushed aggregate base, grading D	58,500 ✓	Cu.yd. Ton	2^{90}	$169,650^{00}$ ✓
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
201(1)	Reconditioning of roadbed		Mile		
202(1)	Patching pavement		Sq.yd.		
217(1)	Bituminous plant-mix base		Ton		
220(1)	Bituminous concrete base		Ton		
220( )	Asphalt cement, penetration ______		Ton Gallon		
230(1)	Plain portland cement concrete base		Sq.yd.		
230(2)	Reinforced portland cement concrete base		Sq.yd.		

Vancouver Design Stencil #5
Revised November, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ______________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
300( )	Gravel surface course, grading ____		Ton Cu.yd.		
300( )	Crushed aggregate surface course, grading ____		Ton Cu.yd.		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
310(4)	Asphalt, grade Mc-250, prime coat	300	Gallon Ton	65^{00}	$19,500^{00}$
310(10)	Blotter material, prime coat	1870	Cu.yd. Ton	4^{00}	7480^{00}
311(4)	Emulsified asphalt, grade SS- 1, tack coat	50	Gallon Ton	65^{00}	3250^{00}

Vancouver Design Stencil #8
Revised October, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ______________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
316( )	Road-mix surfacing laid, Case		Mile Sq.yd.		
316( )	Road-mix aggregate,		Cu.yd. Ton		
316( )	Asphalt grade ____________ road-mix		Gallon Ton		
316(11)	Placing bituminous road-mix surfacing on road approaches		Each		
317(1)	Plant mixture	39,200 ✓	Ton	6^{50}	$254,800.^{00}$ ✓
317(3)	Asphalt cement, 85 - 100 penetration, plant mix	2360 ✓	Gallon Ton	45^{00}	$106,200^{00}$ ✓
317(6)	Plant mixture (including asphalt cement & mineral filler)		Ton		
317(7)	Placing plant mixture on road approaches	8	Each	100^{00}	800^{00} ✓
318(1)	Bituminous premix		Ton		
330(1)	Reinforced portland cement concrete pavement		Sq.yd.		
330(2)	Plain portland cement concrete pavement		Sq.yd.		

Vancouver Design Stencil #10
Revised October, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ________________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
406(1)	Class A concrete	100	Cu.yd.	100^{00}	$10{,}000^{00}$
406(1)	Class A concrete (Substructure)		Cu.yd.		
406( )	Class concrete		Cu.yd.		
406(9)	Reinforced concrete headwall, Type , for culvert pipe		Each		
406(10)	Reinforced concrete headwall for pipe arch, span, rise		Each		
406(11)	Class A concrete (Superstructure)		Lump Sum		
406(14)	Reinforced concrete headwall for Twin _____ inch culverts		Each		
406(15)	Reinforced concrete headwall for Twin pipe arch, _____span, _____rise		Each		
406A(2)	Prestressed concrete (girders, beams), foot span		Each		
406A(3)	Prestressed concrete superstructure, _____ foot span		Each		
406B(1)	Pneumatically applied Mortar blanket		Cu.yd.		
407(1)	Reinforcement steel	11,000	Pound	0.20	2200^{00}
407(3)	Wire mesh reinforcement		Pound		

Vancouver Design Stencil #14
June, 1967

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
453(1)	24 inch 16 gage galv. corr. metal pipe, or equal as listed	3500	Lin.ft.	6.00	21,000.00
453(1)	30 inch 16 gage galv. corr. metal pipe, or equal as listed	1000	Lin.ft.	7.00	7,000.00
453(1)	36 inch 16 gage galv. corr. metal pipe, or equal as listed	472	Lin.ft.	12.00	5664.00
453(1)	72 inch 10 gage galv. corr. metal pipe, or equal as listed	86	Lin.ft.	40.00	3440.00
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				

Vancouver Design Stencil #26
March, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet).

Route ____________ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
583(3)	Galvanized beam-type guardrail 12'-6" spacing		Lin.ft.		
583(~~4~~ 2)	Galvanized beam-type guardrail ~~6'-3" spacing~~	20375	Lin.ft.	4^{00}	$81{,}500^{00}$ ✓
583(5)	Beam-type guardrail, weathering steel, 12'-6" spacing		Lin.ft.		
583(6)	Beam-type guardrail, weathering steel, 6'-3" spacing		Lin.ft.		
583(7)	Anchors for Beam-type guardrail	46	Each	200^{00}	9200^{00} ✓
584(1)	Removing and resetting guardrail		Lin.ft.		
585(1)	Removing and stockpiling salvaged guardrail		Lin.ft.		
586(1)	Removing and disposing of existing guardrail		Lin.ft.		
587(1)	Removing and disposing of existing cattle guards		Each		
590(1)	Furnishing & placing topsoil		Cu.yd.		
590(2)	Placing topsoil		Cu.yd.		
591(1)	Seeding, fertilizing & mulching (furnished and applied)	4,000	1,000 Sq.ft.	10^{00}	$40{,}000^{00}$ ✓
591(2)	Seeding only (furnished and applied)		1,000 Sq.ft.		
591(3)	Jute mesh (furnished and applied)		1,000 Sq.ft.		
594(1)	Woven wire fabric		1,000 Sq.ft.		

"L" Line (West of Summit)

Vancouver Design Stencil #29
June 1967

Preliminary

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route Mont 28 Section MacDonald Pass

* Major Items

Total Contract Construction		$ 1,770,377.00 ✓
Engineering	+ 25%	$ 442,653.00 ✓
Contingencies (BLM & FDR)		$
Striping ______ miles at $150.00 per mile NPS		$
Signing ______ miles at $300.00 per mile NPS		$
	Subtotal	$
		$
TOTAL ESTIMATED COST		$ 2,213,000.00 ✓
Program Amount (NPS)		$

Station: 10+00 to Station 257+00

Station: ______ to Station ______

Length: 4.6781 ✓ Miles

Grading & Surfacing

Width: 40'

Type:

Surfacing:

Vancouver Design Stencil #1
June, 1967

U. S. DEPARTMENT OF TRANSPORTATION
Bureau of Public Roads
Region 8

ENGINEER'S ESTIMATE

Made by:
Date: 2/69
Checked by:
Date:
Revised by:
Date:

Route: 38 Mont. Mc Donald Pass
Section
County:
State: Montana
BLM District
Forest
Park

Item No.	Item	Quantity	Unit	Unit Price	Amount
10	Extra and misc. work	All Req'd.		Cont. Sum	18000.00
100(1)	Clearing		Acre		
100(2)	Grubbing		Acre		
100(3)	Clearing and grubbing	90	Acre	2000.00	180000.00
100(4)	Pit clearing and grubbing		Acre		
100(5)	Clearing and grubbing		Lump Sum		
100(6)	Clearing (special)		Lump Sum		
100(7)	Preparation of stockpile areas		Acre		
100(8)	Advance clearing		Acre		
101(1)	Selective removal of trees and snags		Sq.ft.		
101(8)	Selective falling of trees and snags		Sq.ft.		

Vancouver Design Stencil #2
Revised July, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
* 102(1)	Unclassified excavation	835,000	Cu.yd.	0.80	668,000 ✓
102(4)	Borrow excavation, Case 1		Cu.yd.		
102(6)	Selected borrow, topping, Case 1		Cu.yd.		
102(8)	Stripping borrow pits, Case 1		Cu.yd.		
102(9)	Furrow ditches		Lin.ft.		
102(10)	Rounding slopes ( )		Lin.ft.		
102(11)	Unclassified excavation (station basis)		Station		
102(13)	Stripping pits and quarries		Cu.yd.		
102(18)	Rounding cut slopes	26,000 ✓	Lin.ft.	0.25	6500.00 ✓
103(1)	Excavation for structures	800	Cu.yd.	10.00	8000.00 ✓
103(2)	Excavation for structures (bridges)		Cu.yd.		
103(3)	Foundation fill		Cu.yd.		
103(9)	Excavation for structures (foundation trench)		Cu.yd.		
104(1)	Special subbase, grading ____________		Cu.yd.		
104(2)	Special subbase, grading ____________		Ton		

Vancouver Design Stencil #3
Revised October 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ________________ Section ________________

Item No.	Item	Quantity	Unit	Unit Price	Amount
105(1)	Station yard overhaul		Sta.yd.		
105(2)	Yard mile overhaul	175,000	Yd.mi.	0.30	52500.00
105(3)	Overhaul of borrow, Case 1		Yd.mi.		
105A(1)	Station yard haul		Sta.yd.		
105A(2)	Yard mile haul		Yd.mi.		
105A(3)	Haul of borrow, Case 1		Yd.mi.		
107(1)	Finishing previously constructed roadbed		Mile		
107(2)	Finishing previously constructed roadbed		Station		
108(1)	Watering	21,000 ✓	M Gal. Unit	2.00	42,000.00
108(4)	Emulsified asphalt, grade		Ton		
109(1)	Rolling (roller)		Hour		
111(1)	Obliteration of old roadways		Unit		
112(1)	Roadside cleanup		Acre		
150(1)	Logging roads	All req'd	Lump Sum		
105(1)	Logging roads	All req'd	Lump Sum		

Vancouver Design Stencil #4
Revised October 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
200(1)	Gravel base, grading ______		Cu.yd.		
200(2)	Gravel base, grading ______		Ton		
200(1a)	Crushed aggregate base, grading C	✓ 117,000	Ton Cu.yd.	2^{80}	327,600^{00} ✓
200(1b)	Crushed aggregate base, grading D	✓ 38000	Cu.yd. Ton	2^{90}	110,200^{00} ✓
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ______		Ton Cu.yd.		
201(1)	Reconditioning of roadbed		Mile		
202(1)	Patching pavement		Sq.yd.		
217(1)	Bituminous plant-mix base		Ton		
220(1)	Bituminous concrete base		Ton		
220( )	Asphalt cement, penetration ______		Ton Gallon		
230(1)	Plain portland cement concrete base		Sq.yd.		
230(2)	Reinforced portland cement concrete base		Sq.yd.		

Vancouver Design Stencil #5
Revised November, 1963

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ______________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
300( )	Gravel surface course, grading ____		Ton Cu.yd.		
300( )	Crushed aggregate surface course, grading ______		Ton Cu.yd.		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ____, Grading ___, Stockpile No. ____		Cu.yd. Ton		
310(4)	Asphalt, grade RC-250, prime coat	200 ✓	Gallon Ton	65.00	13,000.00 ✓
310(2)	Blotter material, prime coat	1210 ✓	Cu.yd. Ton	4.00	4840.00 ✓
311(4)	Emulsified asphalt, grade SS- ______, tack coat	35 ✓	Gallon Ton	65.00	2275.00 ✓

Vancouver Design Stencil #8
Revised October, 1963

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ______________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
316( )	Road-mix surfacing laid, Case		Mile Sq.yd.		
316( )	Road-mix aggregate,		Cu.yd. Ton		
316( )	Asphalt grade __________, road-mix		Gallon Ton		
316(11)	Placing bituminous road-mix surfacing on road approaches		Each		
317(1)	Plant mixture	25,500	Ton	6^{50}	$165,750^{00}$
317(3)	Asphalt cement, 85-100 penetration, plant mix	1530	Gallon Ton	45^{00}	$68,850^{00}$
317(6)	Plant mixture (including asphalt cement & mineral filler)		Ton		
317(7)	Placing plant mixture on road approaches	6	Each	100^{00}	600^{00}
318(1)	Bituminous premix		Ton		
330(1)	Reinforced portland cement concrete pavement		Sq.yd.		
330(2)	Plain portland cement concrete pavement		Sq.yd.		

Vancouver Design Stencil #14
June, 1967

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route________________ Section __________

Item No.	Item	Quantity	Unit	Unit Price	Amount
453(1)	24 inch 16 gage galv. corr. metal pipe, or equal as listed	2600	Lin.ft.	6.00	15600.00
453(1)	30 inch 16 gage galv. corr. metal pipe, or equal as listed	1000	Lin.ft.	7.00	7000.00
453(1)	48 inch 16 gage galv. corr. metal pipe, or equal as listed	152	Lin.ft.	16.00	2,432.00
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	____ inch ____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	____ inch ____ gage bit. coated corr. metal pipe, or equal as listed				

Vancouver Design Stencil #26
March, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet).

Route________________ Section________________

Item No.	Item	Quantity	Unit	Unit Price	Amount
583(3)	Galvanized beam-type guardrail 12'-6" spacing		Lin.ft.		
583(~~4~~ 3)	Galvanized beam-type guardrail ~~6'-8" spacing~~	11,925 ✓	Lin.ft.	4^{00}	47,700^{00} ✓
583(5)	Beam-type guardrail, weathering steel, 12'-6" spacing		Lin.ft.		
583(6)	Beam-type guardrail, weathering steel, 6'-3" spacing		Lin.ft.		
583(7)	Anchors for Beam-type guardrail	36 ✓	Each	200^{00}	7200^{00} ✓
584(1)	Removing and resetting guardrail		Lin.ft.		
585(1)	Removing and stockpiling salvaged guardrail		Lin.ft.		
586(1)	Removing and disposing of existing guardrail		Lin.ft.		
587(1)	Removing and disposing of existing cattle guards		Each		
590(1)	Furnishing & placing topsoil		Cu.yd.		
590(2)	Placing topsoil		Cu.yd.		
591(1)	Seeding, fertilizing & mulching (furnished and applied)	2220	1,000 Sq.ft.	10^{00}	22200.00 ✓
591(2)	Seeding only (furnished and applied)		1,000 Sq.ft.		
591(3)	Jute mesh (furnished and applied)		1,000 Sq.ft.		
594(1)	Woven wire fabric		1,000 Sq.ft.		

Alt 1 (West Side of Summit)

Vancouver Design Stencil #29
June 1967

Preliminary
ENGINEER'S ESTIMATE
(Continuation Sheet)

Route Mont 28 Section MacDonald Pass

* Major Items

Total Contract Construction		$ 1,622,045.00
Engineering	+25% ±	$ 405,955.00
Contingencies (BLM & FDR)		$
Striping ____ miles at $150.00 per mile NPS		$
Signing ____ miles at $300.00 per mile NPS		$
	Subtotal	$
		$
TOTAL ESTIMATED COST		$ 2,028,000.00
Program Amount (NPS)		$

Station: 10+00 to Station 259+00

Station: ____ to Station ____

Length: 4.944 Miles

Grading & Surfacing

Width: 40'

Type: ____

Surfacing: ____

Vancouver Design Stencil #1
June, 1967

U. S. DEPARTMENT OF TRANSPORTATION
Bureau of Public Roads
Region 8

ENGINEER'S ESTIMATE

Made by:
Date: 2/69
Checked by:
Date:
Revised by:
Date:

Route: 28-Mont.
Section: MacDonald Pass - Alt 1 (westside)
County:
State: Montana
BLM District
Forest
Park

Item No.	Item	Quantity	Unit	Unit Price	Amount
10	Extra and misc. work	All Req'd.		Cont. Sum	17,000.00 ✓
100(1)	Clearing		Acre		
100(2)	Grubbing		Acre		
100(3)	Clearing and grubbing	90	Acre	2000	180 000.00 ✓
100(4)	Pit clearing and grubbing		Acre		
100(5)	Clearing and grubbing		Lump Sum		
100(6)	Clearing (special)		Lump Sum		
100(7)	Preparation of stockpile areas		Acre		
100(8)	Advance clearing		Acre		
101(1)	Selective removal of trees and snags		Sq.ft.		
101(8)	Selective falling of trees and snags		Sq.ft.		

Vancouver Design Stencil #2
Revised July, 1968

Att. 1

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route 28-Montana

Section McDonald's Pass
(West side)

Item No.	Item	Quantity	Unit	Unit Price	Amount
* 102(1)	Unclassified excavation	630,000	Cu.yd.	0.80	504,000.0
102(4)	Borrow excavation, Case 1		Cu.yd.		
102(6)	Selected borrow, topping, Case 1		Cu.yd.		
102(8)	Stripping borrow pits, Case 1		Cu.yd.		
102(9)	Furrow ditches		Lin.ft.		
102(10)	Rounding slopes ( )		Lin.ft.		
102(11)	Unclassified excavation (station basis)		Station		
102(13)	Stripping pits and quarries		Cu.yd.		
102(18)	Rounding cut slopes	28,000	Lin.ft.	0^{25}	7000^{00}
103(1)	Excavation for structures	1000	Cu.yd.	10.00	10,000.0
103(2)	Excavation for structures (bridges)		Cu.yd.		
103(3)	Foundation fill		Cu.yd.		
103(9)	Excavation for structures (foundation trench)		Cu.yd.		
104(1)	Special subbase, grading		Cu.yd.		
104(2)	Special subbase, grading ________		Ton		

Vancouver Design Stencil #5
Revised November, 1963

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________ Section ____________

Item No.	Item	Quantity	Unit	Unit Price	Amount
300( )	Gravel surface course, grading ___		Ton Cu.yd.		
300( )	Crushed aggregate surface course, grading ___		Ton Cu.yd.		
305( )	Stockpiled crushed aggregate, Section ___, Grading ___, Stockpile No. ___		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ___, Grading ___, Stockpile No. ___		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ___, Grading ___, Stockpile No. ___		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ___, Grading ___, Stockpile No. ___		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ___, Grading ___, Stockpile No. ___		Cu.yd. Ton		
305( )	Stockpiled crushed aggregate, Section ___, Grading ___, Stockpile No. ___		Cu.yd. Ton		
310(4)	Asphalt, grade MC-250, prime coat	205	Gallon Ton	65.00	13,325.00
310(10)	Blotter material, prime coat	1260	Cu.yd. Ton	4.00	5,040.00
311(4)	Emulsified asphalt, grade SS- ___, tack coat	35	Gallon Ton	65.00	2275.00

Vancouver Design Stencil #8
Revised October, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ______________ Section ______________

Item No.	Item	Quantity	Unit	Unit Price	Amount
316( )	Road-mix surfacing laid, Case		Mile Sq.yd.		
316( )	Road-mix aggregate,		Cu.yd. Ton		
316( )	Asphalt grade __________, road-mix		Gallon Ton		
316(11)	Placing bituminous road-mix surfacing on road approaches		Each		
317(1)	Plant mixture	26,500	Ton	6^{50}	172,250^{00}
317(3)	Asphalt cement, 85-100 penetration, plant mix	1600	Gallon Ton	45^{00}	72,000^{00}
317(6)	Plant mixture (including asphalt cement & mineral filler)		Ton		
317(7)	Placing plant mixture on road approaches	6	Each	100	600^{00}
318(1)	Bituminous premix		Ton		
330(1)	Reinforced portland cement concrete pavement		Sq.yd.		
330(2)	Plain portland cement concrete pavement		Sq.yd.		

Vancouver Design Stencil #3
Revised October 1968

AH. 1

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route 28 Montana

Section McDonald Pass (Westside)

Item No.	Item	Quantity	Unit	Unit Price	Amount
105(1)	Station yard overhaul		Sta.yd.		
105(2)	Yard mile overhaul	129,000	Yd.mi.	$ 0.30	$ 38,700.00
105(3)	Overhaul of borrow, Case 1		Yd.mi.		
105A(1)	Station yard haul		Sta.yd.		
105A(2)	Yard mile haul		Yd.mi.		
105A(3)	Haul of borrow, Case 1		Yd.mi.		
107(1)	Finishing previously constructed roadbed		Mile		
107(2)	Finishing previously constructed roadbed		Station		
108(1)	Watering	16,000	M Gal. Unit	2.00	32,000.00
108(4)	Emulsified asphalt, grade		Ton		
109(1)	Rolling (roller)		Hour		
111(1)	Obliteration of old roadways		Unit		
112(1)	Roadside cleanup		Acre		
150(1)	Logging roads	All req'd	Lump Sum		
105(1)	Logging roads	All req'd	Lump Sum		

Vancouver Design Stencil #4
Revised October 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route________________ Section________________

Item No.	Item	Quantity	Unit	Unit Price	Amount
200(1)	Gravel base, grading ________		Cu.yd.		
200(2)	Gravel base, grading ________		Ton		
200(4a)	Crushed aggregate base, grading ________	✓ 122,000	Ton Cu.yd.	2^{80}	✓ 341,600^{00} ✓
200(4b)	Crushed aggregate base, grading ________	✓ 40,000	Cu.yd. Ton	2^{90}	✓ 116,000^{00} ✓
200( )	Crushed aggregate base, grading ________		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ________		Ton Cu.yd.		
200( )	Crushed aggregate base, grading ________		Ton Cu.yd.		
201(1)	Reconditioning of roadbed		Mile		
202(1)	Patching pavement		Sq.yd.		
217(1)	Bituminous plant-mix base		Ton		
220(1)	Bituminous concrete base		Ton		
220( )	Asphalt cement, penetration ________		Ton Gallon		
230(1)	Plain portland cement concrete base		Sq.yd.		
230(2)	Reinforced portland cement concrete base		Sq.yd.		

Vancouver Design Stencil #10
Revised October, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route ____________________ Section ____________________

Item No.	Item	Quantity	Unit	Unit Price	Amount
406(1)	Class A concrete	13	Cu.yd.	125.00	1,625.00
406(1)	Class A concrete (Substructure)		Cu.yd.		
406( )	Class concrete		Cu.yd.		
406(9)	Reinforced concrete headwall, Type , for culvert pipe		Each		
406(10)	Reinforced concrete headwall for pipe arch, span, rise		Each		
406(11)	Class A concrete (Superstructure)		Lump Sum		
406(14)	Reinforced concrete headwall for Twin ____ inch culverts		Each		
406(15)	Reinforced concrete headwall for Twin pipe arch, ____span,____rise		Each		
406A(2)	Prestressed concrete (girders, beams), foot span		Each		
406A(3)	Prestressed concrete superstructure, ____ foot span		Each		
406B(1)	Pneumatically applied Mortar blanket		Cu.yd.		
407(1)	Reinforcement steel	1650	Pound	0.20	330.00
407(3)	Wire mesh reinforcement		Pound		

Vancouver Design Stencil #14
June, 1967

HH 1

ENGINEER'S ESTIMATE
(Continuation Sheet)

Route 28-Montana

Section McDonald Pass (West Side)

Item No.	Item	Quantity	Unit	Unit Price	Amount
453(1)	18 inch 16 gage galv. corr. metal pipe, or equal as listed	2600	Lin.ft.	$6.00	$15,600.00
453(1)	30" inch 16 gage galv. corr. metal pipe, or equal as listed	1000	Lin.ft.	7.00	7,000.00
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(1)	_____ inch _____ gage galv. corr. metal pipe, or equal as listed		Lin.ft.		
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				
453(2)	_____ inch _____ gage bit. coated corr. metal pipe, or equal as listed				

Vancouver Design Stencil #26
March, 1968

ENGINEER'S ESTIMATE
(Continuation Sheet).

AH 1

Route 28-Montana

Section McDonald Pass
(west side)

Item No.	Item	Quantity	Unit	Unit Price	Amount
583(3)	Galvanized beam-type guardrail 12'-6" spacing		Lin.ft.		
583(~~4~~ 2)	Galvanized beam-type guardrail ~~6'-3" spacing~~	13,925	Lin.ft.	4.00	55,700.00
583(5)	Beam-type guardrail, weathering steel, 12'-6" spacing		Lin.ft.		
583(6)	Beam-type guardrail, weathering steel, 6'-3" spacing		Lin.ft.		
583(7)	Anchors for Beam-type guardrail	40	Each	200.00	8000.00
584(1)	Removing and resetting guardrail		Lin.ft.		
585(1)	Removing and stockpiling salvaged guardrail		Lin.ft.		
586(1)	Removing and disposing of existing guardrail		Lin.ft.		
587(1)	Removing and disposing of existing cattle guards		Each		
590(1)	Furnishing & placing topsoil		Cu.yd.		
590(2)	Placing topsoil		Cu.yd.		
591(1)	Seeding, fertilizing & mulching (furnished and applied)	2200	1,000 Sq.ft.	10.00	22,000.00
591(2)	Seeding only (furnished and applied)		1,000 Sq.ft.		
591(3)	Jute mesh (furnished and applied)		1,000 Sq.ft.		
594(1)	Woven wire fabric		1,000 Sq.ft.		

FEDERAL HIGHWAY ADMINISTRATION
FEDERAL HIGHWAY PROJECTS DIVISION
SURVEY & DESIGN BRANCH

RECONNAISSANCE STUDY
PHYSICAL CHARACTERISTICS

STATE: MONTANA ROUTE: McDONALD PASS

SECTION: 2 miles East of Elliston to Sweeny Creek

FOREST: Helena National Forest

DATUM: Aerial Survey - 1":100' - 5' Contour Interval

PREPARED BY: T. J. Hildreth DATE: 9/29/69

ITEM	$2,213,000 L-line West	$2,028,000 Alt. 1 West		$4,967,000 L-line East	$4,640,000 Alt 1 East
LENGTH IN MILES	4.68	4.94		6.89	6.99
TOTAL CENTRAL ANGLE	511°16'	564°06'		653°51'	989°09'
TOTAL NUMBER OF CURVES	10	10		13	21
MAXIMUM CURVE	6°	6°		7°30'	7°30'
NUMBER OF MAXIMUM CURVES	4	3		2	2
MAX. CENTRAL ANGLE, I CURVE	81°16'	103°35'		187°24'	210°21'
MAXIMUM GRADE	6%	6%		6.24%	6%
LENGTH OF MAXIMUM GRADE	14,300'	8750'		2500'	31,558'
TOTAL RISE AND FALL	1191'	1191'		1945'	1945'
HIGHEST GRADE ELEVATION	6324'	6324'		6324'	6324'
LENGTH OF GRADE OVER 5 %	19,398'	19,015'		31,266'	31,[illegible]'

SECTION 7

NEGATIVE DECLARATION AND SUPPORTING DATA

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MONTANA HIGHWAY COMMISSION
RECEIVED
AUG 13 1971
HELENA, MONTANA

DATE: August 12, 1971

In reply refer to: 08-24.2 DA2

TO : State Highway Commission
Helena, Montana 32:KFS

FROM : H. N. Stewart Division Engineer
Helena, Montana

SUBJECT: Montana F 249(21), FH 28
MacDonald Pass - East

* Attached is one approved copy of your August 9, 1971 negative declaration.

* Attachment

Date Recd. Preconst. 8-13-71

Act	Info	MAIL ROUTE	Attach	Initial
		30 [illegible]		
		30 Road Design		
	✓	3[illegible] [illegible] Design	✓	
		[illegible] Engineers		
		[illegible] Region	✓	
	✓	[illegible] Landscape		
		35 East Region		
		34 Hydraulic		
		35 Traffic		
		37 Pub. Hearings		
		38 Sec. Roads		
		39 Consultant Design		
		File		✓

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

GPO 910.222

MONTANA HIGHWAY COMMISSION
HELENA, MONTANA

August 4, 1971

32-GOP

F 249(21)
MacDonald Pass East

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

ATTENTION: Harold N. Stewart

Gentlemen:

The Forest Service has concurred in our proposal to prepare a negative declaration for the subject project. We are forwarding a copy of their letter for your information.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

32-GOP;SCK;KFS:gm

cc: J.R. Beckert
S.C. Kologi

GEORGE VUCANOVICH, CHAIRMAN
[redacted]
H.S. HANSON, VICE CHAIRMAN
[redacted]
R.E. COFFEY
[redacted]
JOHN D. WHEELER

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

August 9, 1971

32-KFS
IN REPLY REFER TO
F 249(21)
MacDonald Pass - East
Negative Declaration
S.C.K

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

This is to request your concurrence in our opinion that an Environmental Statement is not required for the subject project and that the following Negative Declaration will suffice:

1. LOCATION AND DESCRIPTION OF PROJECT - The proposed project is located in Powell and Lewis and Clark Counties on U.S. 12, west of Helena, Montana. (See Exhibit A) The project begins approximately 1500 feet west of MacDonald Pass in Powell County. It proceeds easterly over MacDonald Pass (the continental divide) for a distance of approximately 6.6 miles. It ends at a point near Sweeny Creek approximately 6 miles west of Helena in Lewis and Clark County. It is proposed to construct a four lane facility with a 56 foot finished top width consisting of 4-12 foot lanes and 2-4 shoulders. Inslopes will be 6:1 with ditches and cut slopes requiring considerable special design in accordance with geological recommendations. Slopes which are not solid rock will be topsoiled and seeded to re-establish vegetative growth.

Drainage culverts will be installed as required to accommodate natural drainage patterns and to provide for roadway and ditch accumulations of surface water. A large diameter steel pipe will be required at Sweeny Creek.

(con't)

GEORGE VUCANOVICH, CHAIRMAN
HELENA

S. HANSON, VICE CHAIRMAN
BILLINGS

G. R. COONEY
BUTTE

WILLIAM M. KESSNER
BLACK EAGLE

R. E. COFFEY
WOLF POINT

JOHN H. WHEELER, SECRETARY
HELENA

Intersections with existing road systems and approaches will be constructed as needed. Guardrail, guide posts, fences, and related appurtenances will be included to complete the facility and adapt it to the needs of the users.

2. PURPOSE OF PROJECT - The purpose of the project is to provide a fast, safe, and efficient highway for the traveling public.

3. DISCUSSION OF ENVIRONMENTAL IMPACTS

   A. Controversial Issues - We are not aware of any controversy associated with the proposed project.

   B. Significant Alteration of the Existing Character of the Area - We do not feel that the subject project will significantly alter the character of the area. The new alignment follows very closely the present highway corridor. Improvement will be made in the horizontal alignment and the roadway will be wider than the existing highway which will result in a construction scar that is larger than the one that exists at present. The use of presplit rock cuts, drainage control features, vegetation reestablishment and other design features will serve to reduce the impact of the project on the existing character of the area.

   C. Displacement of People - The subject project will not involve relocation or displacement of any people.

   D. Impact on Recreation Lands - The MacDonald Pass area experiences extensive recreational use throughout the year. Three U.S. Forest Service campgrounds are located in areas adjacent to the project. A Girl Scout camp and a private tourist attraction known as Frontier Town are also located along the project route.

(con't)

The water supply for the Forest Service's Porcupine Campground crosses the present highway and will be perpetuated in the design of the new roadway. The impact of the highway construction on these developed recreational facilities will be somewhat detrimental during the construction period, however, the long term impact will not be significant.

Other recreational activities enjoyed in the MacDonald Pass area include hunting, hiking, snowmobiling, and just relaxing in this scenic mountain area. The proposed project will have little effect on these pursuits, except that the improved highway facility will make getting there a safer and more enjoyable trip.

E. Effect on the Pattern or Behavior of Wildlife Species and Wildlife Breeding, Nesting, or Feeding Grounds - The area surrounding the subject project abounds with wildlife. Deer, elk, moose, bear, along with smaller game such as grouse, squirrels, and rabbits inhabit the forests adjacent to the project. Construction of the project will remove some native cover which would otherwise be available to the wildlife in the area. However, in comparison to the forested acreage, which presently exists, the requirements for this project are not significant.

F. Air or Water Pollution Problems - There will be some air pollution during construction caused by grading and surfacing operations. Also some water pollution could occur on new slopes prior to the establishment of sod from seeding operations. With appropriate special provisions, these problems can be held to a minimum.

G. Effect on the Water Table - The water table in the first two miles of the project is very close to the surface with many springs evident and extensive frost heave damage occurring in the present highway every Spring.

The new highway will be designed so that this frost heave problem is eliminated. This may involve a lowering of the water table through the use of perforated drains or similar treatment. If this approach is used there could be some slight change in the vegetative growth immediately adjacent to the roadway. Plants which thrive in swampy areas could be replaced by species which grow in areas with less moisture.

H. Benefits to Local and Long Distance Travel - The proposed highway improvement will benefit both local and through traffic. The present highway, with it's steep grades, sharp curvature, and large percentage of trucks, does not operate efficiently. The reconstruction of this road, with additional lanes and less restrictive horizontal alignment, will provide a much safer and faster facility.

I. Transportation Quality - The proposed improvement will provide the public with a higher quality transportation facility than the existing highway.

J. Social and Economic Opportunities for the Area Residents - The proposed project will not affect the social and economic opportunities of the area residents, except for the increased economic activity during the construction period and also the increase brought about by the improved highway facility.

K. Enhancement of Work, School, Recreational, and Religious Opportunities - No significant effect is anticipated with regard to work, school, recreational, and religious opportunities.

4. BASIS FOR NEGATIVE DECLARATION - It is our opinion that the subject project will not significantly alter the environment and that an Environmental Statement is not required.

We will appreciate the return of one signed copy of this letter indicating your concurrence.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

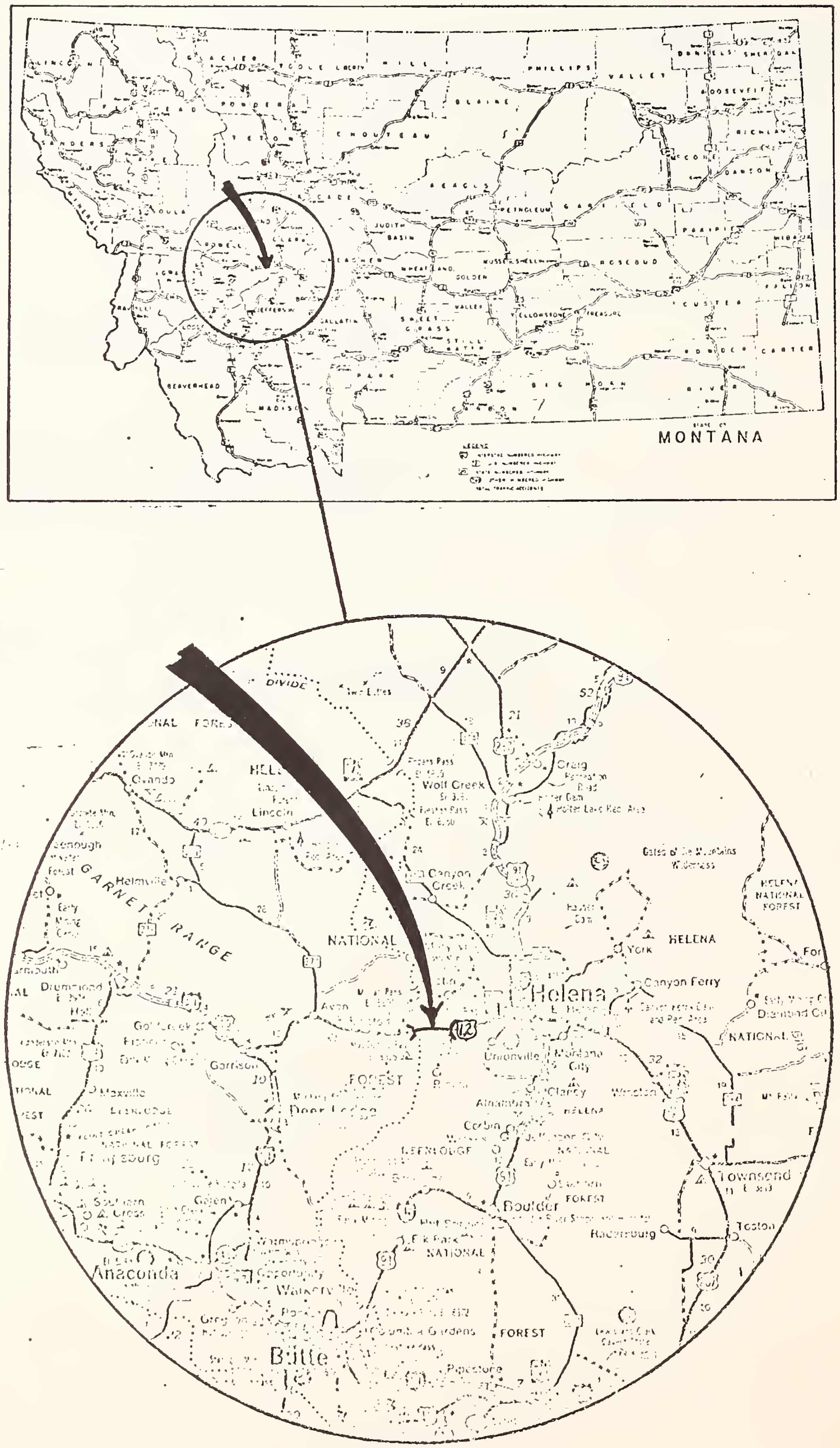
BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

CONCUR____________________ DATE________
Division Engineer
Federal Highway Administration

32-GOP:SCK:KFS:sp

cc: J.R. Beckert
R.B. Dundas
R.E. Champion
S.C. Kologi ✓

LOCATION MAPS



UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Region One, Missoula, Montana 59801

MONTANA HIGHWAY COMMISSION
RECEIVED
JUL 30 1971
HELENA, MONTANA

JUL 29 1971

REPLY TO: 7750 Forest Highways

SUBJECT: MacDonald Pass East

TO: Lewis M. Chittim, State Highway Engineer
Montana State Highway Department
6th Avenue & Roberts
Helena, Montana 59601

Since the subject project will be located near or over the existing route and not in a new corridor, we concur in the proposal to prepare a negative declaration in lieu of an environmental statement.

for STEVE YURICH
Regional Forester

Date Recd. Preconst. 8/4/71

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP | RMH		
		30 Field Design		
		30 [illegible] Design		
✓		[illegible] Engineers		
		[illegible] Region		
	✓	32 Landscape		
		33 East Region		
		34 Hydraulic		
		35 Traffic		
		37 Pub. Hearing		
		[illegible] Sec. Roads		
		[illegible] Consultant Design		
✓		File		

RETURN TO M & F
[illegible]
CHIEF COUNSEL
[illegible]

SECTION 8

FOREST SERVICE STAGE 1 IMPACT REPORT

Helena National Forest, 616 Helena Avenue, Helena, Montana 59601

REPLY TO: 2140 Surveys
7750 Forest Highways

July 13, 1970

SUBJECT: Reconstruction U. S. Highway No. 12,
MacDonald Pass - East Section

TO: Regional Forester

Enclosed are six copies of a Stage I Impact Report for the East Section of U. S. Highway No. 12.

This impact report as written was based on an autoscreen print reconnaissance map received a number of months ago.

On 7/9/70 we received one set of maps with a narrative report, plan-profile and other information. The changes that resulted are not contained in the body of the report and rather than rewriting this report we will cover them in this memorandum, all of which will ultimately be included in the Stage II Report, if applicable and resolved on the ground.

The map we received on 7/9/70, for the record, was not developed from the latest aerial photographs available. This is particularly significant on entrance roads locations from the highway to campgrounds, summer homes and private facilities.

There are some changes in alignment of the road which are shown in green on the small scale map of the report which may or may not have much significance in light of a proposed three-lane road with ditch which will day-light a considerable swath through the area.

All references in the Multiple Use Survey Report with reference to speed or saving of insignificant time is not pertinent. These alignment changes are necessary for safe sight distance, particularly when a third passing lane is introduced.

Some items considered for prescription in the Impact Report for the west section is again repeated in this section of the road and must be coordinated. This is included under Item II, Recommendations, Map Designation D.

1. A frontage road will be considered for access to the Vista Point, Cromwell-Dixon and MacDonald Pass Campgrounds. This must be surveyed to ascertain feasibility.

2. Map designations shown green halfway between G and H to I follows present alignment; halfway between J and K to L a slight change in alignment; a slight change about M into same alignment halfway from M to N; from N to about O the road will follow

present location; halfway between Q and R to the curve in $N\frac{1}{2}N\frac{1}{2}$, Section 32, below T, there is some realignment but substantially the present center line location will be used.

The proposed three-lane road widening will be substantial plus ditch width which varies with the type of material such as rock versus loose granite material is the significant consideration.

Under Item III. Evaluation of Effects of the Proposed Project

Map Designations G to I - present centerline being used.
S - A signing plan needs to be made for both sides of Pass, as suggested in the Forest Engineer's Waters' recommendations, Item 7. Also this is suggested in the Westside report by your office. We will contact the Landscape Architect to formulate such a plan.

Although considered in Other Functional Considerations under Range Management, fencing of both sides of the road is considered primarily from a safety aspect over the opportunity for intensive range management. Livestock does seek the warmth of the road early and late during the season and is a hazard with the present road conditions.

Under Scenic and Landscaping we have given thought to restoration of the abandoned road sections from between G and H to I; J to K; and at M. Whether this can be allowed under this reconstruction is an unknown. Overburden and waste could be dumped here with seeding of grass and tree planting. There may be an opportunity for a viewing and photography area without sacrifice of traffic safety on at least one point.

Another opportunity for Landscaping is the removal of the snow fence and substituting a shelter belt contained within the fenced area. This removes an eyesore and still prevents a portion of blowing snow from piling up on the road. Whether this is part of construction or done by the State Highway Department is irrelevant to us. We understand that a portion of road that has been a problem of drifting snow will have a fill of up to 17 feet.

We have made a few notes on the photographs determining whether the revised centerline location is significant or not.

/S/ F.B. Haller

F. B. HALLER
Lands Staff Officer

FHaller:pb

Enclosure

2140 Reconstruction U. S. Highway No. 12
MacDonald Pass-East Section

MULTIPLE USE SURVEY REPORT

Stage I

Name of Project: Reconstruction U. S. Highway No. 12 - MacDonald Pass East Section

Helena Ranger District, Helena National Forest, Region 1

Prepared by: ______________________ 5/1/70
District Ranger — Date

Report reviewed by: John D. ______________________ 6/29/70
Fire and Timber Staff — Date
See attached notes

Report reviewed by: B/P.W. Watson ______________________ 6/29/70
Forest Engineer - Comments — Date

Report reviewed by: B Heller ______________________ 7/9/70
Range and Wildlife Staff — Date

Approval of Report Recommended by:
Robert Morgan ______________________ 7/16/70
Forest Supervisor — Date

Report approved by: ______________________ 9/16/70
Regional Forester — Date

NOTE: There is a separate Multiple Use Survey Report for the MacDonald Pass - West Section.

RECONSTRUCTION

State Highway No. 12
Forest Highway No. 28

MacDonald Pass East

Recommendations

1. I recommend construction of a two lane highway with an extra upgrade climbing lane.

2. A runaway lane to provide for brake failure should be constructed.

3. To reduce exposure scar on backslopes ~~or~~ cut areas, should be stood up relatively vertical in hard rock and provide a slough catch basin for weather eroded rock.

4. To reduce exposure impact on fill side, on long sliver fills, bin wall construction should be used.

5. Access roads to MacDonald Campground, Vista Point, and Cromwell-Dixon Campground should be included in this project for plant mix asphalt riding surface, with seal coat and chips.

6. Geologic investigation should be made to determine impact of construction on Porcupine Campground. Construction must provide for channelling surface drainage away from water source.

7. A signing plan for MacDonald Pass, from Ten Mile to Little Blackfoot, should be prepared, reviewed and approved prior to final requests for signing consideration in construction. At present this section of highway is over-signed.

Parley Waters

PARLEY WATERS
Forest Engineer

MULTIPLE USE IMPACT REPORT

Stage I

I. INTRODUCTION AND DESCRIPTION

This report concerns the proposed reconstruction of U. S. Highway No. 12 from the summit on MacDonald Pass easterly towards Helena, Montana.

According to the information presently available this section of highway within the Helena Forest will follow the present location in some places and will be reconstructed on entirely new locations in some areas in order to improve alignment. Due to the fact that it is proposed to widen this highway to three traffic lanes as well as change the alignment in places there will be an impact on the aspect of the country, the vegetation, certain Forest Service improvements, and certain private improvements which are permitted in the area by the Forest Service.

The area in question is located in the Travel Influence Multiple Use Zone in Sections 1 and 2, T9N, R6W; Sections 36, T10N, R6W; and Sections 31 and 29, T10N, R5W. Approximately 3.8 miles of highway is involved.

II. RECOMMENDATIONS

It is recommended that the proposed project for reconstructing the highway be approved. The proposed reconstruction will definitely be in the public interest, particularly with regard to the improved highway safety conditions a three-lane road will provide.

It is recommended that close correlation be maintained between the Helena Ranger District and the Highway Department in connection with surveying, designing and constructing this project.

Specific recommendations regarding impact areas, Forest Service improvements, and private owned improvements under Special Use permits which are described in Part III of this report follow. The expenses for carrying out the prescriptions should be borne as part of the highway reconstruction project. These prescriptions may be modified in the Stage II Impact Report after more details are available concerning the proposed route:

Map Designation	Prescription
A	An approach road to reconstructed highway should be constructed for the MacDonald Pass Vista Point Road.

Map Designation	Prescription
B	An approach road to the reconstructed highway should be constructed for the roadway which leads to the borrow pit area north of the highway at this point.
C	During road construction, interruption of water flow through this pipeline should not be prolonged for more than eight hours. Provision should be made for locating the water pipeline inside a three or four inch pipe where it passes beneath the new road fill. This will facilitate withdrawing the water pipe without digging up the highway when waterpipe repairs are needed.
D	An approach road to the reconstructed highway should be constructed for the MacDonald Pass Campground Road. It is recommended, also, that a left turn lane be provided for west bound traffic turning into the MacDonald Pass Campground. An alternative which should be considered would be to construct a frontage road from the Vista Point Road to the MacDonald Pass Campground as shown on the map in Appendix II. This frontage road could be extended to Cromwell Dixon Campground as well. (See Multiple Use Survey Report for MacDonald Pass West Section of Highway 12 Reconstruction.)
E	An approach road to the reconstructed highway should be constructed for the Frontier Town Road at this point. Also, it may be necessary to construct a new site along the Frontier Town Road in order to accommodate the animated device which belongs to Frontier Town.
F	A suitable approach to the reconstructed highway should be provided for access to the Highway Department Maintenance Station at this point.

Map Designation	Prescription
G	The Forest Service information sign located north of the highway at this point will be removed in 1970. The road design for this point should provide for the new road to have parking space on both sides of the traffic lanes because of the large information sign which will be retained on the south side of the highway.
G to I	It is recommended that the center line for the road not be moved as proposed on the reconnaissance map for the stretch of road from Engineering Stations 305+00 to 335+00. To do so would create an unnecessary disturbance on the land.
H	An approach road to the reconstructed highway should be constructed for the Forest Heights Summer Home Area road at this point. The Forest Service directional sign should be moved and reset as needed to meet the new situation.
I	An approach road to the reconstructed highway should be constructed for the summer home entrance road at this point.
I to J J to L L to N N to S	When one considers the numerous changes in alignment which are proposed between these points some questions come to mind: Are these changes really necessary? Are the benefits to be derived from the alignment changes going to be worth the additional construction costs that will be involved in making through cuts compared to widening the present road? Are the benefits to be derived from the alignment changes going to be worth the damage to the landscape? One of the arguments for changing the alignment of this road will be for the purpose of increasing travel speed. Presently the average maximum safe speed for an automobile is 40 m.p.h. for the entire 3.8 miles between the Forest boundary and the summit (providing one doesn't get delayed behind a big truck).

Map Designation	Prescription
	If the road is rebuilt on the present location following the contour of the mountain, the average safe auto speed would remain at about 40 m.p.h., except that with the three-lane feature autos would not be delayed behind trucks.
	If the road were rebuilt on the proposed location it can be assumed that the average safe maximum speed would be increased - maybe to as much as 60 m.p.h. This would result in a saving of about two minutes per trip (from the Forest Boundary to the summit). Is this saving in time really significant under the circumstances?
	It is recommended that we and the highway planning engineers take a good long look at this situation before approving the alignment changes which are proposed for this section of road.
N	An approach road to the reconstructed highway should be constructed for the private road which joins the highway at this point.
O	It is recommended that a Forest Service Geologist examine the area near this point to determine if further cutting into the mountainside would have an adverse effect on the spring which supplies water for Porcupine Campground.
P	An approach road to the reconstructed highway should be constructed for the road which gives access to the residence at this point.
Q	The Forest Service will take this sign board down just before highway reconstruction is to begin. It will be erected again outside the limits of construction activity in the same vicinity as soon as possible.
R	Approach roads to the reconstructed highway should be constructed for the borrow pit roadway on the northeast side and for the Porcupine Campground entrance on the southwest side at this point. It is recommended, also, that a left turn lane be provided for westbound traffic turning into Porcupine Campground. A suitable site for relocation of the campground entrance sign will also have to be found.

Map Designation	Prescription
S	Design of the new highway at this point should provide for a new site suitable for the stone forest entrance sign support. The structure should be moved to the new site or if it cannot be moved intact a new structure should be built.
T	The monument which designates a benchmark and a $\frac{1}{4}$ Section corner will have to be removed. A new monument which "witnesses" the location of the $\frac{1}{4}$ Section corner should be established. Re-establishment of a benchmark at this point is not essential.

This ends the portion of the project on National Forest Land.

III. EVALUATION OF EFFECTS OF THE PROPOSED PROJECT

The approximate location of impact areas and the improvements to be effected are shown on the Appendix map by means of points designated A, B, C, etc.

Descriptions of the impact areas and improvements are as follows:

Map Designation	Description
A	The entrance road to the MacDonald Pass Vista Point joins the present highway at this point on the south side.
B	At this point a roadway leads to an abandoned borrow pit located north of the highway. This site is used as a disposal point for hazard trees removed from the campgrounds in the area when those trees are not suitable for making into firewood.
C	A $1\frac{1}{2}$ inch water pipeline serving the MacDonald Pass Campground passes under the present highway in this vicinity. This pipeline is contained within a 4 inch pipe beneath the roadway so as to facilitate withdrawing the water pipe for repairs without digging up the highway.

Map Designation	Description
D	The entrance road to MacDonald Pass Campground joins the present highway at this point.
E	The entrance road to Frontier Town joins the present highway at this point. It is under Special Use Permit. Also, under Special Use Permit in this vicinity is an animated device belonging to Frontier Town which is located a short distance outside the present highway R/W. If the highway is widened to the north in this area it may become necessary to establish a new site further north for the Frontier Town device.
F	The Highway Department Maintenance Station is located on the north side of the highway at this point. Judging from what is shown on the autoscreen print of the reconnaissance map the highway will not be widened to the north at this point.
G	At this point, which is a wide area providing off-highway parking space on both sides of the roadway, there are large Forest Service information type signs located on both sides of the highway. Widening of the highway at this point will probably be towards the north.
G to I	According to the reconnaissance map it is proposed to locate the center line of the new road just north of the present road for a linear distance of approximately 3000 feet (Engineering Stations 305+00 to 335+00). This will result in a slight improvement in road alignment but the clearing and disturbance to the land which will occur when added to the width of the present highway will result in a disturbed area much wider than necessary to accommodate the proposed roadway.
H	The entrance road to Forest Heights Summer Home Area joins the present highway at this point. There is a Forest Service owned directional sign at the junction which identifies the site.
I	The entrance road to an individual summer home which is under Special Use Permit joins the present highway at this point.

Map Designation	Description
I to J	According to the reconnaissance map it is proposed to improve alignment of the road by going almost straight between these two points.
J to L	According to the reconnaissance map it is proposed to improve alignment of the road by cutting through a ridge between these points in lieu of following the contour around the ridge as is done by the present road.
L to N	The proposal, according to the reconnaissance map, is to improve alignment of the road by cutting through a ridge between these points in lieu of following the contour around the ridge as the present road does.
N	A private road which is under Special Use Permit joins the highway at this point.
O	A spring which has been developed to supply water to Porcupine Campground is located at this point. It is possible that further cutting into the mountainside as proposed near this point might have a adverse effect on the flow of water from this spring.
P	An individual residence with an access road from the highway is located at this point. This residence, which is under Special Use Permit, is located approximately one-tenth mile from the present roadway. If the proposed road is constructed in the location shown on the reconnaissance map the distance between this residence and the roadway will be decreased by about two-thirds.
Q	A Forest Service sign board for displaying fire prevention posters is located just off the present highway, on the northeast side, near this point.
R	At this point there are side roads on both sides of the present highway. The entrance to Porcupine Campground is located on the southwest side. On the northeast there is a roadway leading to a borrow pit area. This site is used as a disposal point for hazard trees as they are removed from Porcupine Campground.

Map Designation	Description
S	At this point there is a Forest Entrance sign support constructed of native stone. Widening of the present highway at this point will undoubtedly involve relocating this structure. The stone structure is built upon a concrete slab base which appears to have been poured directly on bed-rock. It may not be possible to move this structure without breaking it up.
T	At this point there is a monument located just off the present roadway on the northeast side. It serves to designate a benchmark and the ¼ Section corner between Sections 29 and 32, T10N, R5W. This monument consists of a 3" diameter brass disk mounted on a 9" diameter by 18" high concrete pier. The brass disc is inscribed: U. S. Dept. of Agri. & Bur. Pub. Roads - Bench Mark No. 66.28B - Elev. 5209.06 - ¼ S 29/32. This point is also the National Forest boundary.

IV. OTHER FUNCTIONAL CONSIDERATIONS

A. FIRE CONTROL

This project will increase the Helena District's workload in fire control during the period of survey, design, and construction. There will be an added risk of man-caused fires from the presence of surveyers, construction workers and construction machinery connected with the project. There will also be slashings from the right-of-way clearings to be disposed of by burning (unless this practice is replaced entirely before then with a chipping or similar method in order to avoid air pollution.)

B. RANGE MANAGEMENT

The management plan for the Priests Pass grazing allotment proposes a management fence known as the Spring Creek Drift Fence. Construction of this fence will create sub-units within the allotment which will result in opportunities for more intensive range management.

If the proposed highway construction project were to include fencing the right-of-way on that portion of the road within the Forest such a fence would take the place of a large share of the proposed management fence needs while at the same time providing a safety factor against livestock wandering onto the highway.

C. MARKETABLE TIMBER

When the final location is determined and clearing extremities determined it will be necessary for the Helena District to estimate the volume of merchantable timber that will have to be removed. Following this the manner of disposal and method for scaling the volume will be recommended.

D. SCENIC AND LANDSCAPING

Final design of the proposed road project should include provisions for revegetation of cut slopes and fill slopes as well as other areas which might be disturbed in connection with road construction. There will be some opportunities for stockpiling topsoil and redistributing it on cut slopes prior to seeding. Due to the general soil conditions for the area (decomposed granite) fertilizing and mulching will be essential.

E. SPECIAL USE PERMIT

It will be necessary to issue a new Special Use Permit covering the new road.

V. APPENDIX

Appendix I - Map showing approximate location of points A, B, C, etc. which are to be considered.

Appendix II - Map showing possible location for frontage road to campgrounds.

Appendix III - Photo taken looking west from Point I.

Appendix IV - Photo taken looking west from Point J.

Appendix V - Photo taken looking west from Point K.

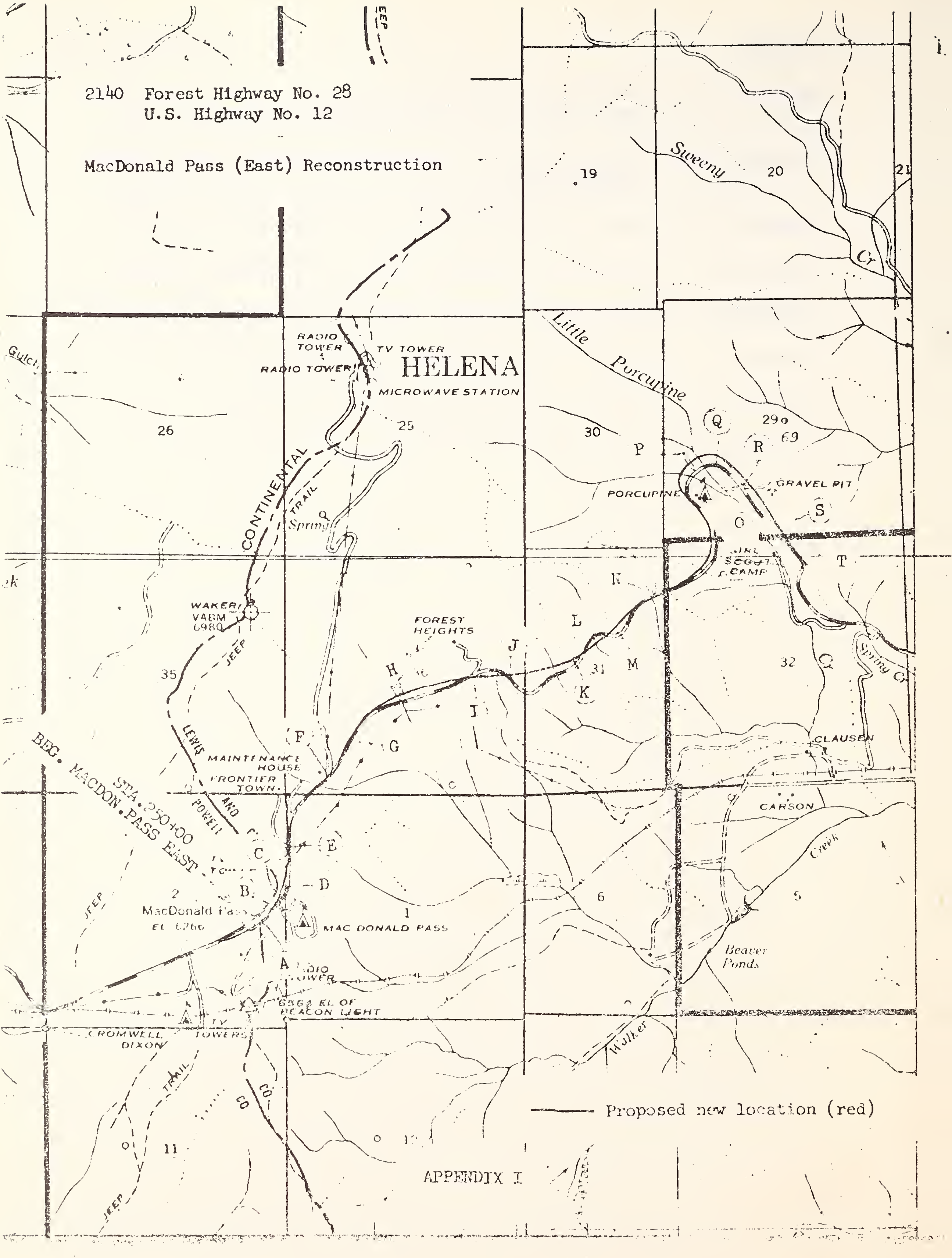
Appendix VI - Photo taken looking west from Point L.

Appendix VII - Photo taken looking East from Point L.

Appendix VIII - Photo taken looking west from Point N.

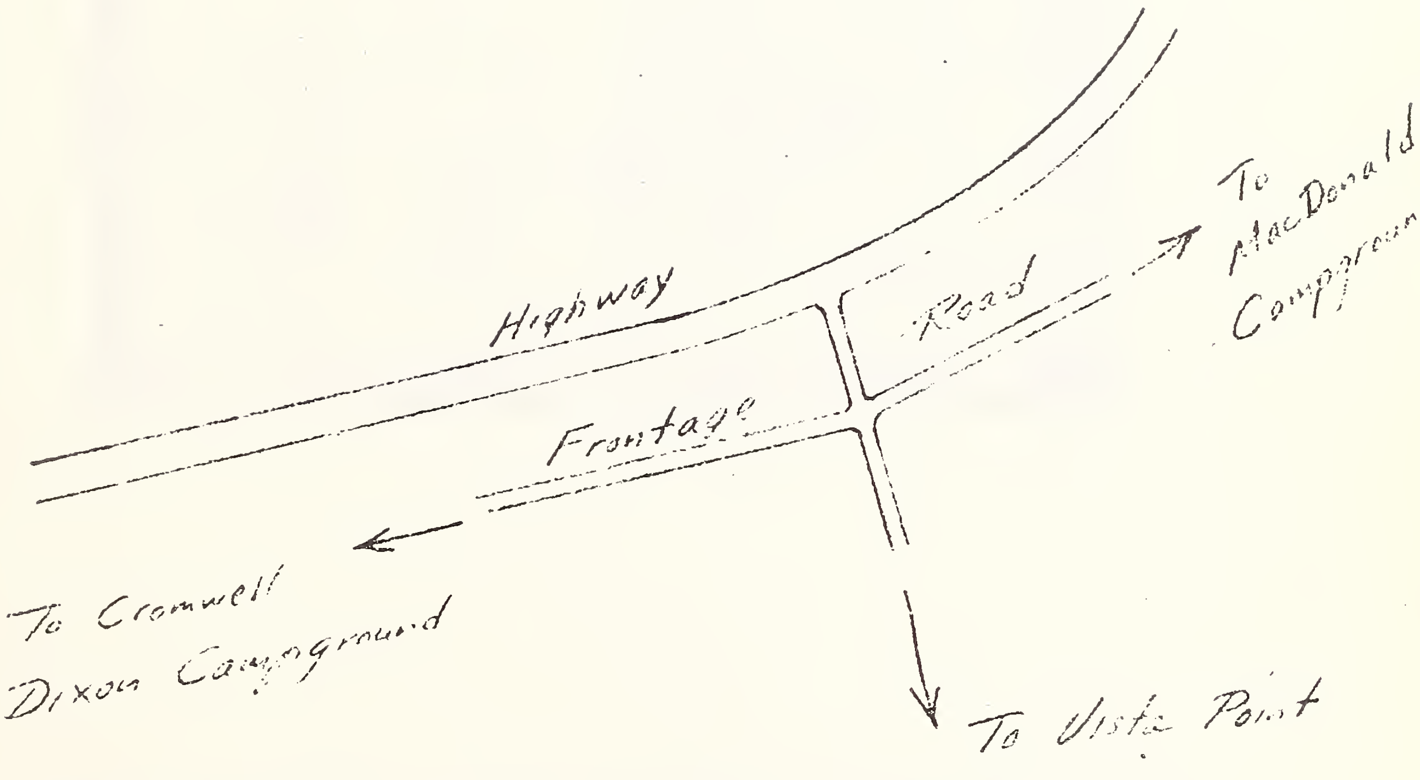
2140 Forest Highway No. 28
U.S. Highway No. 12

MacDonald Pass (East) Reconstruction

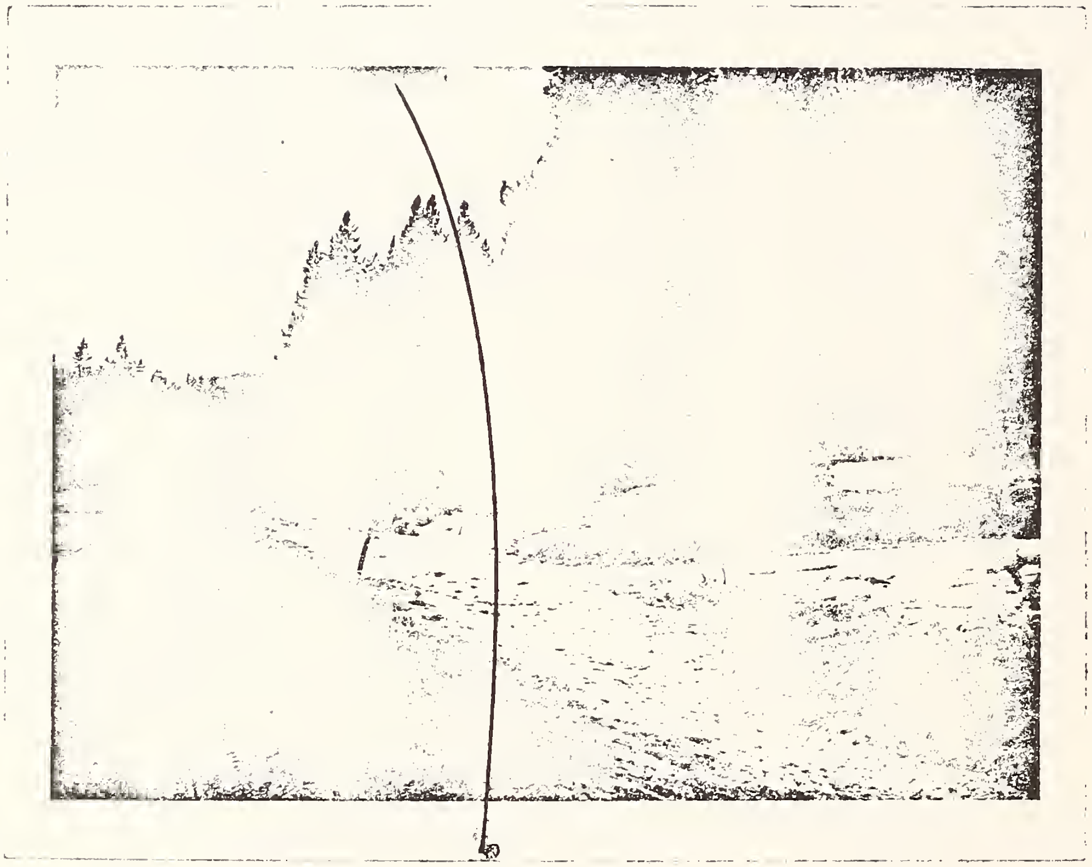


Proposed new location (red)

APPENDIX I

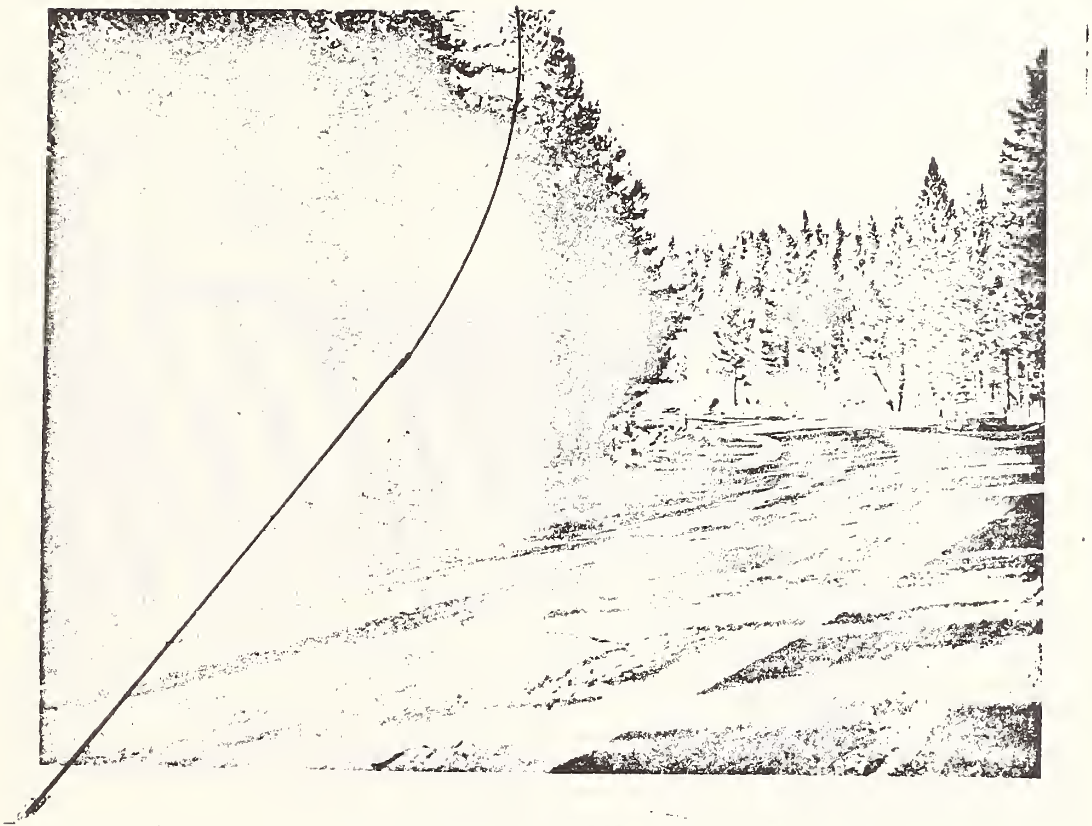

Highway
Frontage
Road
To MacDonald Campground
To Cromwell Dixon Campground
To Vista Point

Appendix II



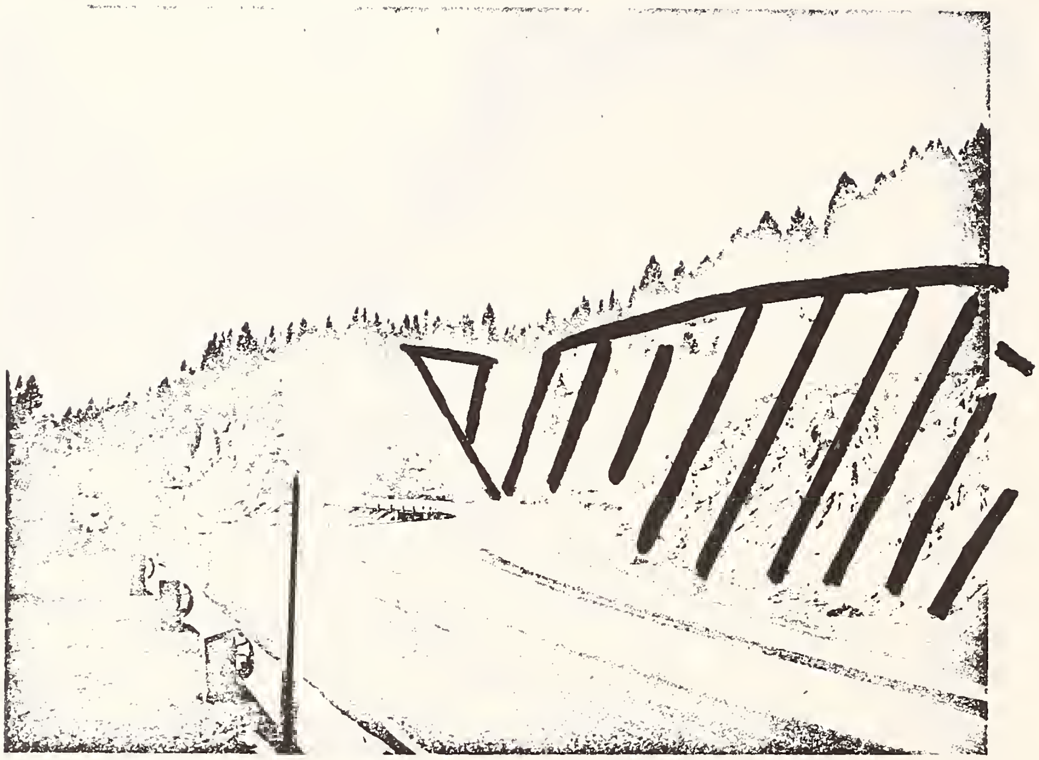
Looking West from Point I. Blue line indicates approximate location of proposed center line for road. (not signifigant)

Appendix III



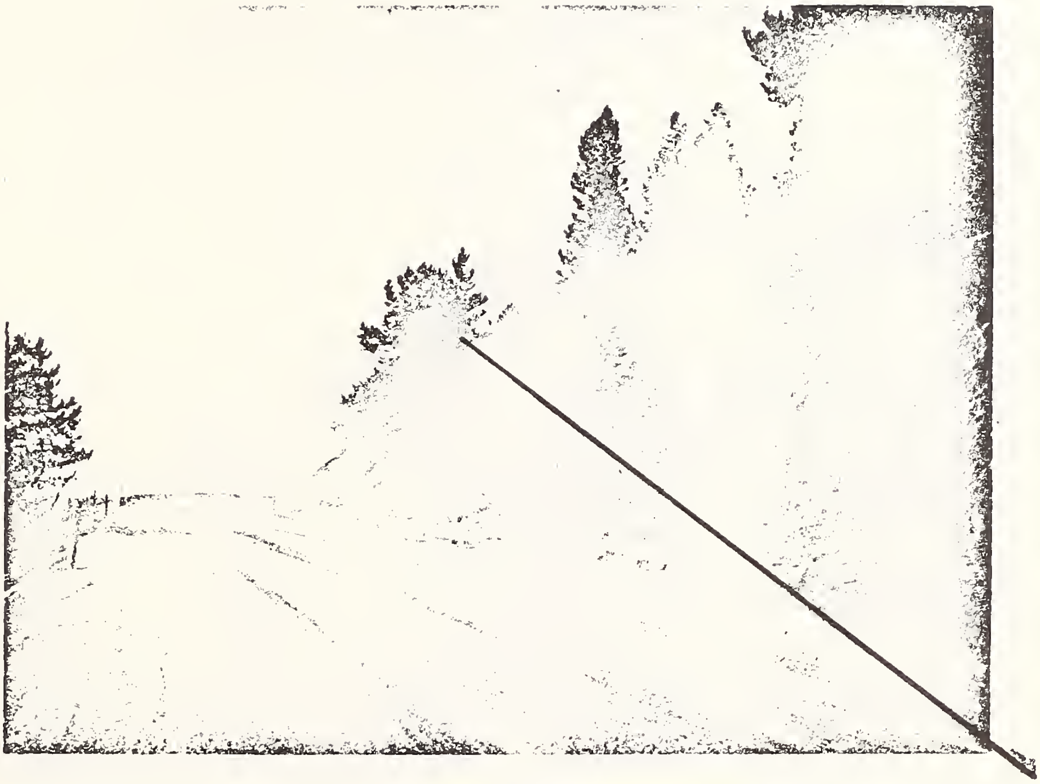
Looking West from Point J. Blue line indicates approximate location of proposed center line for road. (correct)

Appendix IV



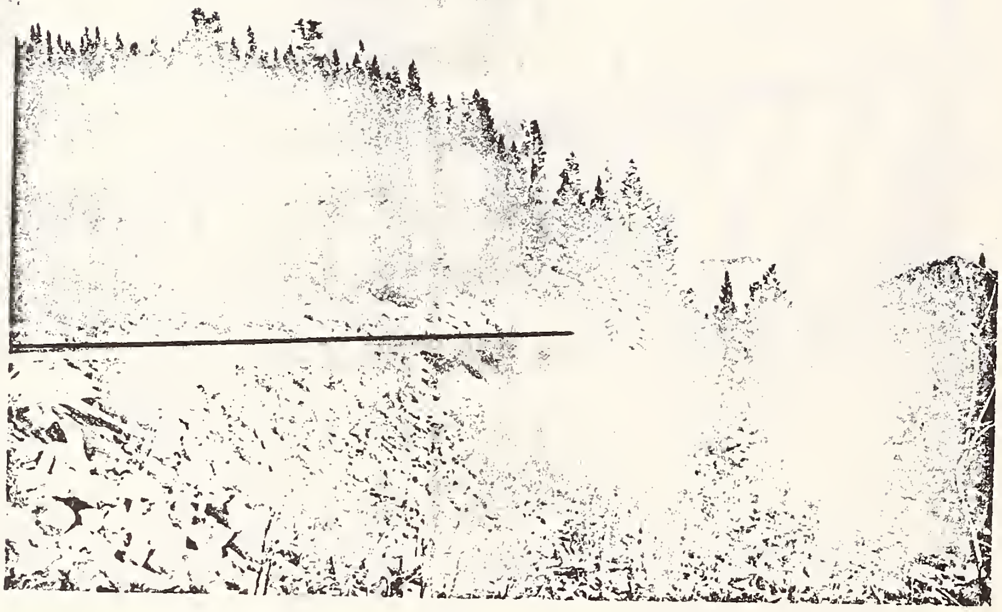
Looking West from Point K. Blue line indicates approximate location of proposed center line for road. Red hatch lines show approximate "cut" areas. (correct - some change)

Appendix V



Looking West from Point L. Blue line indicates approximate location of proposed center line for road. (Correct)

Appendix VI



Looking East from Point L. Blue line indicates approximate location of proposed center line for road. (corrected)

Appendix VII

Looking West from Point N. Blue line indicates approximate location of proposed center line for road. Red "hatch" lines shown approximate "cut" areas. Note "pyramid" which would be left between new road and old road. (Correct- slight change South)

Appendix VIII

SECTION 9

BUREAU OF OUTDOOR RECREATION REPORTS

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

November 11, 1971

32-GOP
IN REPLY REFER TO:

FHP 28-1(1 & 2)
RF 249(21)
MacDonald Pass -
East & West
Ref D-36

Bureau of Outdoor Recreation
1000 Second Avenue
Seattle, Washington 98104

Gentlemen:

This will acknowledge receipt of your letter of October 22, 1971. We have discussed the proposed Continental Divide Trail with personnel of the Helena National Forest and have reviewed the planning and correspondence they have regarding the trail.

On November 6, 1969, Montana Highway Commission personnel met with representatives of the Bureau of Outdoor Recreation relative to highway crossings by the Continental Divide Trail. Attached is a copy of the minutes of that meeting. Since U.S. 12 is not a controlled access highway, access to and from the trail should not present a problem.

Parking and camping facilities are available at two Forest Service campgrounds near MacDonald Pass. These are Cromwell-Dixon Campground with 14 overnight units and MacDonald Pass Campground with 23 overnight units. Both areas have toilet and water facilities available. The attached Forest Service map shows the campground facilities and roadway in relation to the divide. Gates, cattleguards, approach roads and signing are provided in our design so that access to and from the trail will not present a problem.

No trail facilities will be involved in the right-of-way required for this construction and we are not aware of any items which would necessitate the preparation of a Section 4(f) Determination. Since the new roadway follows an existing transportation corridor, we have prepared a negative environmental statement and this has been approved by the Forest Service and the Federal Highway Administration

(Cont'd)

GEORGE VUCANOVICH, CHAIRMAN
HELENA

H. S. HANSON, VICE CHAIRMAN
DILLON

G. R. COONEY
BUTTE

WILLIAM M. KESSNER
[illegible]

R. E. COFFEY
WOLF POINT

JOHN D. WHEELER, SECRETARY
HELENA

November 11, 1971

The attached photographs show the proposed alignment and right-of-way requirements for the projects.

If there are any joint development type facilities which you feel could be tied for construction to one of our highway projects, we would be willing to discuss this possibility with you. In the past, we have tied Forest Service and Fish and Game projects to our contracts, thereby reducing the cost of a small project by combining it with a larger project. In this procedure, the funds, plans and specifications are provided to the Highway Commission and we award the combined contract subject to the concurrence of the other sponsoring agency.

If we can be of any assistance or if further information is desired, please feel free to contact us.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

32-GOP:SCK:KFS:jj

cc: J.R. Beckert
R.B. Dundas
S.C. Kologi
F.H.W.A.
Forest Service - Helena National Forest

Attachments

March 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OUTDOOR RECREATION
PACIFIC NORTHWEST REGION
1000 SECOND AVENUE
SEATTLE, WASHINGTON 98104

COMMISSION
RECEIVED
OCT 26 1971
HELENA, MONTANA

IN REPLY REFER TO:
D36 Your reference:
U. S. 12, Elliston to Rimini Road
FHP 28-1 (1 & 2) and RF 249 (21)

OCT 22 1971

Lewis M. Chittim, P.E.
Montana State Highway Engineer
6th Avenue and Roberts
Helena, Montana 59601

Dear Mr. Chittim:

We received your September 13 notice of a combined corridor and design public hearing for the above referenced project. We were unable to attend the hearing on October 14. However, we request that this letter be made a part of the hearing record.

One of the trails being studied under Section 5(e) of the National Trails System Act (P.L. 90-543) is the proposed Continental Divide trail. If established, it will extend generally along the Continental Divide from Canada to Mexico and would cross U. S. Highway 12 at McDonald Pass. This study is being coordinated by the Bureau of Outdoor Recreation's Mid-Continent Regional Office in Denver, Colorado. The study report is now being prepared for publication.

Our concern with the highway project design is that access to both north and south junctions of the proposed trail with U. S. Highway 12 be provided from the road and that hikers on the trail be able to cross the highway right-of-way without significant difficulty. The provision of a small parking area at the trail-heads could be incorporated into the new highway's design. Finally, we are advising that if construction of this project necessitates the taking of additional right-of-way where present trail facilities exist, it may require preparation of a Section 4(f) Determination as required under the Department of Transportation Act of 1966, as amended.

We would appreciate your sending us additional information concerning the amount of right-of-way to be acquired for this project in the McDonald Pass area.

Sincerely yours,

Maurice H. Lundy
Regional Director

E E Allen
(S) E. E. Allen
Acting Regional Director

SECTION 10

NARRATIVE RIGHT-OF-WAY REPORT

S. H. Comm.--Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To PRECONSTRUCTION DIVISION

From CHIEF RIGHT OF WAY AGENT

Date March 31, 1970

Subject: F 249(21)PE
MacDonald Pass East
Ref: 62-MLN

Attached is a xerox copy of the Narrative Right of Way Report prepared by the Butte District R/W Office dated March 13, 1970.

This report was prepared in reply to your request dated December 5, 1970. Your original request forwarded auto screen prints with the approximate proposed alignment for this project. The district office felt that additional information was needed and prints of existing Forest Highway Projects 28A and B were forwarded.

We hope this information is sufficient for your needs. If further studies are required, please let us know.

REC:DPB:fb

Attachments

cc: Butte R/W Supervisor

Date Recd. Preconst. 4-1-70

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP| RMH		
		30 Field Design		
		30 Surfacing Design		
		31 Office Engineers		
	✓	32 West Region	✓	
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		35 Urban		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Design		
	✓	File		

ROBERT E. CHAMPION

Avoid Verbal Instructions

1. LAND USE: The private land is used for grazing. The west half of the job runs through forest land which is used for recreation.

2. ACCESS FEATURES TO EACH PROPERTY OWNER'S HOLDINGS:

At Station 560+75 leading off the proposed road in a southerly direction is a county road which becomes forest road No. 218 at the Forest Service line and reads Rimini. Leading off in a northerly direction is a cut-off road to the Forest Road No. 335.

At Station 520+10 leading off the proposed road in a westerly direction is a county road which provides access to the Harry Clusen and William Clusen property, and then turns south and runs adjacent to the Forest property.

Station 475 is a stock underpass which will need to be replaced.

Station 470 leading off in a southerly direction is the access road to Granby's.

Station 465 leading off in a westerly direction is the lower access road to the Porcupine Camp Ground, a 20 unit camp, which is maintained by the Helena Jaycees on a cooperative basis with the Forest Service.

Station 450+50 is the location of a stockpass that should be perpetuated.

Station 420+80 leading off in a northwesterly direction is the upper access to the Porcupine Campground, a 20 unit camp maintained by the Helena Jaycees in cooperation with the Forest Service.

Station 420+50 is an old road which takes off in an easterly direction to an old gravel pit.

Station 420+20 leading off in a northerly direction is the access to a cabin about 400 feet off the road.

Station 330+85 is the eastern access to the Forest Height summer homesite area. The road leads off in a northerly direction.

Station 310+90 is the western access to the Forest Heights summer homesite area. This road leads off in a northwesterly direction.

Station 298+80 is located near the sand house, which will have to be relocated.

At Station 290+25 the State maintained house might have to be relocated, depending on final staking and plans.

Station 270+85 - Frontier Town - owned by John Quigley in SE¼SE¼ of Section 35, is private deeded land within the forest boundary. Access will have to be provided. The Barking Dog sign is on a Forest permit and might have to be re-located.

Station 264+50 is the access to the Cromwell Dixon Camp Ground, a 75 unit camp operated by the Forest Service.

Station 258+10 is the access to the Vista Point, which is used as an access to the south side of the road for a recreation and rest area.

3. TRAFFIC PATTERNS AND AVAILABILITY OF:

School Bus Routes -- No school bus.

Mail Routes -------- The route goes to the Ten Mile Creek

Stock Movements ---- Stock trails are utilized by Mrs. A.L. Clusen and Granby's. There are approximately 173 head of cattle in the area.

Utilities -------- A few power lines are located in the area, but according to available material none will be moved.

Forest Service ---- The forest will use and are satisfied with the above mentioned accesses.

4. IRRIGATION SYSTEMS: None.

Access to headgates - none; the only water crossed on the job is Little Porcupine Creek.

5. RELOCATION: Will be handled by the relocation agent of the district. This will include the Barking Dog Sign, the Highway Maintenance Shop, and foreman's house, the sand shed, and the Forest Service sign on top of the Continental Divide.

6. SOCIAL and ECONOMIC FACTORS:

(1) recreation

(2) fire protection

(3) employment

Mr. Bill MacKenzie, the district ranger in the Helena District, is making an impact report on the area. When this report becomes available, he will forward it to his superior, Bob Morgan, who will in turn forward a copy to the State Highway Department.

7. INDICATION OF LAND VALUES:

The consensus of opinion of all the people consulted in the area was that the grazing land was valued at $50.00 per acre. The remainder of the land is National Forest land -- which has no market value.

JACK GILES

March 13, 1970

JG:ls

Proof Read JM
Verified
Time to Compile 32 hrs
ped by LS

HISTORY REPORT

John J. Womack, Adjutant General Troop Movement

Gordon R. Bennett, Cabin Sites

Lewis and Clark County Assessor

Powell County Assessor

Lewis and Clark County Reclassification

United States Government Agriculture Department

of Forest Service, Helena Ranger District

Montana Highway Department ,Maintenance House Foreman

S. H. Comm.—Form 4

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Robert E. Champion, P.E.,Chief R/W Agent

From J. V. Keyes, District R/W Supervisor

Date March 23, 1970

Subject: F - 249 (21) P.E.
McDonald Pass - East
Ref: 62 - JAP

Attached hereto is Narrative Right of Way Report covering the above designated project, with a great deal of comment as to existing access features to each property owners holdings.

Please let us know if you desire further information with regards thereto.

JVK:ls
Enclosure

J V Keyes
Avoid Verbal Instructions

District R/W Supervisor

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To PRECONSTRUCTION DIVISION

From CHIEF R/W AGENT

Date January 30, 1970

Subject: F 249(21)PE
MacDonald Pass - East
Ref: 62-JAP

Attached is the "Conceptual Stage" relocation Narrative R/W Report prepared by the District R/W office dated January 19, 1970.

This information is for your use in securing approvals of the final design on the above-captioned project.

If you need any additional information please let us know.

REC:DPB:fb

Attachments

Butte District R/W Supervisor

Date Recd. Preconst. 2-2-70

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP | GBW | RMH		
		31 Office Engineers		
/	✓	32 West Region	✓	
		32 Schweyen		
		33 East Region		
		33 Wing		
		34 Hydraulics		
		35 Urban		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Plans		
		Other		
	✓	File		

ROBERT E. CHAMPION R

Avoid Verbal Instructions

NARRATIVE REPORT

F - 249(21)
McDonald Pass - East
Conceptual Stage

(A) The purpose of this report is to study the effects the proposed route will have on the displacing of persons, and how we can affect their relocation without undue hardships.

(a) The R/W width was furnished by the memorandum requesting this study.

200 feet from C/L on the left side
100 feet from C/L on the right side

(B) This study is a single line with no alternates, and the only improvement in the taking, as close as I can estimate, is the Montana State Highway maintenance house located in the vicinity of Station 300± .

(a) The individuals which will be displaced will be approximately three and there will be no farms, ranches, businesses nor non-profit organizations affected by this proposed alignment.

(b) The moving of personal property will consist of approximately seven-room house for the amount of $212.00 .

(C) The economic condition will not be affected by this proposed alignment, as this is mostly a widening of the present P.T.W., also this is more or less a primitive area which traverses over a mountain pass.

(D and E) There is no available housing in this vicinity, but this would depend on what the Montana State Highway Department decided to do about moving the site of these improvements. If necessary, the displacees could be moved into Helena... approximately 16 miles East.

(F) I arrived at these conclusions by driving over the route and estimating the stationing by land - marks, as there are no stakes.

(G) I believe that relocation can be accomplished without delay within the allotted time prior to construction.

pproved: 1-23-70

1/19/70

Project F - 249 (21)

Prelim Par. No	Name	Type of Imps. in Taking	Est Supp. Housing Paymt.	Est Moving Costs	Estimated Incidental Costs	Tot Est Per Parce
2	Montana Highway Dept.	Maintenance House	0.00	$ 212.00	0.00	$ 212.00

Total Estimated Relocation Costs $ 212.00

adm costs 500.00

Total amount to be programmed $700

REMARKS: (Attach additional sheets as needed)

This taking is the maintanance house located close to the top of McDonald Pass, belonging to the Montana State Highway Commission.

RELOCATION AGENT 1/19/ DATE

APPROVED: RELOCATION SUPERVISOR 1-23-7 DATE

S. H. COMM.—FORM 4-A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To BUTTE DISTRICT R/W SUPERVISOR

From CHIEF R/W AGENT

Date December 16, 1969

Subject: F 249(21)PE
MacDonald Pass - East
REF: 62-JAP

Attached are two copies of auto screen prints, 1 inch equals 1000 feet ±, indicating the limits of and the approximate proposed alignment for the above-captioned project. Also attached is one Xerox copy of the memorandum dated December 5, 1969, from the Regional Engineer-West.

Please use these enclosures to prepare the narrative R/W report as outlined in our procedural memorandum of March 20, 1969. This information will be used to further develop the plan and determine the exact location for this project. As noted in the attached memo, please use an assumed width of 160 feet for right of way.

Please make your charges to the captioned PE number as Right of Way has not yet been programmed.

Please forward this information as soon as possible. If you have any questions regarding this request, please let us know.

REC:DPB:fb

Attachments

cc: Preconstruction Division ✓

Date Recd. Preconst 12-18-69

Act	Info	MAIL ROUTE	Attach	Initial
		30 [illegible] | GBW | RMH		
		31 Office Engineers		
	✓	32 West Region		
		32 [illegible]		
		33 [illegible]		
		[illegible]		
		[illegible] Hydraulics		
		[illegible]		
		[illegible]		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Plans		
		Other		
	✓	File		

ROBERT E. CHAMPION

Avoid Verbal Instructions

S. H. COMM.--FORM 4

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To R. E. Champion, P.E., Chief R/W Agent

Date December 5, 1969

From S.C. Kologi, P.E., Regional Engineer - West

Subject: F 249(21)
MacDonald Pass East

Attached are three 1" = 1000'± autoscreen prints indicating the limits of and approximate proposed alignment for the subject project.

We will appreciate your furnishing a narrative right-of-way report for the project including the information as outlined in your procedural memorandum of March 20, 1969.

For purposes of this report you can assume that the standard primary width of 160 feet will suffice.

If there is anything further that you need, please feel free to contact us.

32-SCK:gm

cc: G.O. Powers
J.R. Beckert
R.B. Dundas
N.C. Sullivan ✓

Stephen C. Kologi

Avoid Verbal Instructions

Stephen C. Kologi, P.E., Regional Eng.
West

SECTION 11

FISH AND GAME REPORT

STATE OF MONTANA

DEPARTMENT OF

FISH AND GAME

Helena, Montana 59601

July 22, 1970

RECEIVED
JUL 24
HELENA, MONTANA

Mr. Lewis M. Chittim
State Highway Engineer
Montana Highway Department
Helena, Montana 59601

Dear Lew:

We have reviewed proposed Project F 249(21) McDonald Pass East described by FG-124 dated July 6, 1970, and accompanying plan and profile maps. Work for this project involves a culvert placed at right angles in Sweeney Creek.

We will ask for no special considerations to mitigate habitat losses caused by this project.

Sincerely,

Frank
FRANK H. DUNKLE
STATE FISH AND GAME DIRECTOR

FHD/sd

cc: Kologi
Dundas
Erickson
Johnson
Peters

Inf
MAY BE RETAINED
[illegible] HWY. ENGR.
CHIEF COUNSEL
ASST. S. H. E. ADMIN.
ACCOUNTING
PLANNING SURVEY
ASST. S. H. E. ENGIN.
BRIDGE
PRECONSTRUCTION
RIGHT OF WAY
ASST. S. H. E. OPER.
CONSTRUCTION
MAINTENANCE
MATERIALS
OTHER

Date Recd. Preconst. 7-24-70

Act	Info	MAIL ROUTE	Attach	Initial
		30 GCP | RMH		
		30 Field Design		
		[illegible] Surfacing Design		
	✓	31 [illegible] Engineers		
	✓	32 West Region		
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		35 Urban		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Design		
	✓	Dundas		
	✓	File		

✓ F&G File-2

STATE OF MONTANA

DEPARTMENT OF

FISH AND GAME

Helena, Montana 59601

July 8, 1970

MONTANA [illegible] COMMISSION
RECEIVED
JUL - 8 1970
HELENA, MONTANA

Mr. Lewis M. Chittim
State Highway Engineer
Montana Highway Department
Helena, Montana 59601

Dear Lew:

This is to acknowledge receipt of the Notice of Construction and plans for proposed Project F 249 (21), MacDonald Pass East.

These plans have been sent to our Habitat Evaluation Leader and district personnel for review and recommendations.

Sincerely,

FRANK H. DUNKLE
STATE FISH AND GAME DIRECTOR

By James A. Posewitz by JCP
JAMES A. POSEWITZ, CHIEF
ENVIRONMENTAL RESOURCES DIVISION

JAP/sd

cc: Dick Johnson

Date Recd. Preconst. 7-8-70

Act	Info	[illegible] ROUTE	Attach	Initial
		30 [illegible]		
		30 [illegible] n		
		30 [illegible] Design		
	✓	31 [illegible] eers		
	✓	32 [illegible] on		
		32 [illegible]		
		33 [illegible]		
		34 [illegible]		
		35 [illegible]		
		36 [illegible]		
		37 [illegible]		
		38 [illegible]		
		39 Co[illegible]		
✓		Dundas		
✓		File		

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

July 6, 1970

32-SCK
IN REPLY REFER TO:

F 249 (21)
MacDonald Pass

Montana Fish and Game Department
Sam. W. Mitchell Building
Helena, Montana 59601

ATTENTION: John Peters

Gentlemen:

Furnished herewith are two sets of plan-profile and appropriate forms for the subject project.

We hope to review this project Thursday July 16, 1970. You will be contacted by phone regarding arrangements for the review.

32-GOP:SCK:sm

cc: R.B. Dundas
S.C. Kologi

Enclosure

Grover O. Powers

Grover O. Powers, P.E.,
Preconstruction Engineer

SECTION 12

FIELD AND OFFICE PLAN-IN-HAND REPORTS, APPROVALS AND COMMENTS

MONTANA HIGHWAY COMMISSION

Helena, Montana 59601

May 6, 1971

32-SCK
REPLY REFER TO

F 249 (21)
MacDonald Pass
East

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

Attached for your information are three (3) copies of an interdepartmental memorandum dated May 3, 1971, summarizing the results of April 28, 1971 meeting.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

32-GOP:SCK:sp

cc:	J.R. Beckert	w/attach
	R.B. Dundas	w/attach
	R.E. Champion	w/attach
	~~S.C.~~ Kologi	w/attach
	Regional Forester Missoula	w/attach
	Forest Supervisor Helena	w/attach

Attachment

S. H. Comm.—Form [illegible]

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To G.O. Powers, P.E., Preconstruction Engineer
Date May 3, 1971

From S.C. Kologi, P.E., Regional Engineer, West
Subject: F 249 (21)
MacDonald Pass
East

On April 28, 1971, an office review was held to review the alternate locations between Stations 328 and 385, lines "A", "B", "C", and "D" on the subject project. The following personnel were present:

G.O. Powers	Preconstruction Eng.	M.H.D.
S.C. Kologi	Regional Engineer, West	M.H.D.
K.F. Skoog	Area Engineer	M.H.D.
S.C. Fetter	Designer III	M.H.D.
R.O. Nelson	Assistant Area Eng.	F.H.W.A.
B.L. Amsden	Construction Engineer	U.S.F.S.
W.H. MacKenzie	District Ranger	U.S.F.S.
Parley Waters	Forest Engineer	U.S.F.S.

The following items were discussed:

1. All present at the review agreed that either alternate "C" or "D" should be utilized on this project due to the reduced impact on the landscape. The Forest Service requested an additional thirty (30) days to study the impact created by using either line "C" or "D". It was decided to hold another office review after the thirty (30) day period has elapsed to hear their studies and comments on lines "C" and "D".

2. It was requested by the Forest Service that the Federal Highway Administration work up the Environmental Statement on this project and it's companion project, west of the pass.

32-SCK:KFS:SCF:sp

cc: S.C. Kologi

Stephen C. Kologi

Stephen C. Kologi, P.E.,
Regional Engineer, West

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To G.O. Powers, P.E., Preconstruction Engineer

Date May 3, 1971

From S.C. Kologi, P.E., Regional Engineer, West

Subject: F 249 (21)
MacDonald Pass
East

On April 28, 1971, an office review was held to review the alternate locations between Stations 328 and 385, lines "A", "B", "C", and "D" on the subject project. The following personnel were present:

G.O. Powers	Preconstruction Eng.	M.H.D.
S.C. Kologi	Regional Engineer, West	M.H.D.
K.F. Skoog	Area Engineer	M.H.D.
S.C. Fetter	Designer III	M.H.D.
R.O. Nelson	Assistant Area Eng.	F.H.W.A.
B.L. Amsden	Construction Engineer	U.S.F.S.
W.H. MacKenzie	District Ranger	U.S.F.S.
Parley Waters	Forest Engineer	U.S.F.S.

The following items were discussed:

1. All present at the review agreed that either alternate "C" or "D" should be utilized on this project due to the reduced impact on the landscape. The Forest Service requested an additional thirty (30) days to study the impact created by using either line "C" or "D". It was decided to hold another office review after the thirty (30) day period has elapsed to hear their studies and comments on lines "C" and "D".

2. It was requested by the Forest Service that the Federal Highway Administration work up the Environmental Statement on this project and it's companion project, west of the pass.

32-SCK:KFS:SCF:sp

cc: /S.C. Kologi

Stephen C. Kologi

Stephen C. Kologi, P.E.,
Regional Engineer, West

Avoid Verbal Instructions

MONTANA
SEP -3 '70
RECEIVED

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Region 1, Missoula, Montana 59801

REPLY TO: 7750 Forest Highways

September 1, 1970

SUBJECT: FHP 28 MacDonald Pass West and F249 (21) MacDonald Pass East

TO: Mr. Lewis Chittim
State Highway Engineer
Montana Highway Commission
6th Avenue and Roberts
Helena, Montana 59601

RETURN TO M & F
MAY BE RETAINED
STATE HWY. ENGR.
CHIEF COUNSEL
ASST. S. H. E. ADMIN.
ACCOUNTING
PLANNING SURVEY
ASST. S. H. E. ENGIN.
BRIDGE
PRECONSTRUCTION
RIGHT OF WAY
ASST. S. H. E.
CONSTR.
MAINT.
MATERIAL
OTHER
Info
Act

We concur with Mr. Kologi's comments in his interdepartmental memorandum of July 22 concerning the office and field review of the preliminary plans for FHP 28 MacDonald Pass west and F249 (21) MacDonald Pass east, at which we were represented.

Assuming that the split between east and west projects will be at approximately Station 235, the State's portion will include the approach or approaches serving the Cromwell-Dixon and MacDonald Pass Campgrounds and the Vista Point road. We reiterate our request that the highway be kept as far as possible from the MacDonald Pass Campground. Incidentally, the proposed centerline crosses the water supply pipeline for this campground at approximately Station 261+30.

We recommend the fencing, to exclude grazing cattle, be barbed-wire type with wooden posts. Also, the fence should be so located within the existing timber that it would prevent cattle from reaching the shelterbelt proposed to be planted.

We expressed concern for the spring which is the water supply for Porcupine Campground. Consideration for the preservation of this spring should be given in any blasting or other construction operations near it.

A sign plan for the entire MacDonald Pass area will be presented to you for consideration prior to final design.

A new Forest entrance sign, mounted on steel posts, will replace the existing sign.

C A Miller

C. A. MILLER
Chief, Division of Engineering

Enclosure

Date Recd. Precconst. 9/8/70
MAIL ROUTE
Initial
Attach
30 GOP
30 Field D
30 Design
Office Engineers
32 West Region
32 Landscape
33 East Region
Hydraulic
35 Urban
36 Traffic
37 Pub. Hearing
38 Sec. Roads
Consultant Design
File
Info
Act

Region 1, Missoula, Montana 59801

7750 Forest Highways September 1, 1970

Montana F.H. Route No. 28, MacDonald Pass (West Side)

Mr. John E. Mors, Chief
Federal Highway Projects Division
Federal Highway Administration
610 East 5th Street
Vancouver, Washington 98661

We concur with Ralph Frame's statements in his report of July 21 to T. J. Hildreth, concerning the field review of the reconnaissance study for the highway on the west side of MacDonald Pass, at which we were represented.

We herewith confirm the verbal request presented at the field review, that, as a safety measure, fencing of both sides of the highway be provided in the highway construction project, as needed to control grazing cattle. Barbed wire, wooden-post type fence is recommended. The fence should be so located that it would prevent cattle from reaching any shelterbelt to be planted.

We also confirm that the Forest entrance sign on the west Forest boundary is to be replaced with a new sign mounted on steel posts.

[illegible]

C. A. MILLER
Chief, Division of Engineering

cc: Helena NF
State Highway Engineer(Chittim)

Enclosure

Helena National Forest, 616 Helena Avenue, Helena, Montana 59601

7750 Forest Highways
(2100)

October 29, 1970

MacDonald Pass-East

Regional Forester
Attn: Don MacDonald

Confirmation of time and date for on-the-ground inspection of proposed road realignment for the MacDonald Pass-East Section.

Ken Skoog of the Montana Highway Department proposed that a November 18, 1970 date be set for inspection of the new realignment. The meeting will be on MacDonald Pass at 10:30 a.m..

Don MacDonald, or his representative, will attend from the Regional Office; Farley Waters, Forest Engineer; Bill MacKenzie, Helena District Ranger; Fred Haller, Staff Assistant, will attend from the Helena Forest.

Mr. Skoog stated new plats will be sent to Missoula and the Forest prior to the meeting.

F. B. HALLER
Lands Staff Officer

cc: Mr. Ken Skoog ←
Montana Highway Commission
Helena, Montana 59601
Farley Waters
D-3

VE
DEC -9 1970
HELENA, MONTANA

State Highway Commission
Helena, Montana 32-GFS

December 8, 1970

08-24.2 DA2

H. N. Stewart, Division Engineer
Helena, Montana

By: E. B. Erickson
District Engineer

F 249(21) MacDonald Pass - East

We concur generally with the Inter-Departmental Memorandum summarizing the results of the office review on Novmeber 18, transmitted with your November 30, 1970 letter.

At this time there remains yet an uncertainty as to the number of lanes, shoulder widths, median widths and other features necessary for design of this project. For this reason your request to proceed with design is not approved. The field survey and right-of-way studies insofar as they are not influenced by the number of lanes involved are approved and may proceed through the areas outlined in your letter.

Recd. Preconst. 12-9-70
West Portion
32 Landscape
Hydraulic
Traffic
Hearing
File

Act Inf
RETURN TO M & F
STATE
CHIEF COUNSEL

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA

November 30, 1970

32-KFS
Skoog
F 249 (21)
Mac Donald Pas
East

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

Gentlemen:

Forwarded herewith are 3 copies of an interdepartmental memorandum summarizing the results of the office review on the subject project held November 18, 1970. We will appreciate your concurrence in this report.

As a result of this meeting and our field review of July 16, 1970 we request your approval to proceed with the field surveys, right-of-way studies, and design on the portions of the project from Station 235± to Station 330± and from Station 385± to Station 594+84.

At such time as plans have been sufficiently developed we will conduct a combined location - design public hearing on the project.

This project was presented to the Highway Joint Development Council on June 10, 1970.

32-GOP:SCK:KFS:sp

cc:	J.R. Beckert	w/attach
	R.B. Dundas	w/attach
	R.E. Champion	w/attach
	L.B. Fox	w/attach
	S.C. Kologi	w/attach
	USFS Regional Forester Missoula	w/attach
	USFS Forest Supervisor Helena	w/attach

Very truly yours,

LEWIS M. CHITTIM, P.E.,
State Highway Engineer

BY Grover O Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

JOHN J. LEARY, CHAIRMAN   G. R. COONEY   JOSEPH M. [illegible]   WILLIAM [illegible]

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To S.C. Kologi, P.E., Regional Engineer, West   Date November 24, 1970

From K.F. Skoog, P.E., Area Engineer, West   Subject: F 249 (21)
Mac Donald Pass-E.

An office review was held November 18, 1970 to review the location of the subject project as presently developed. The following were present:

F.	Haller	Staff Assistant	U.S.F.S.
J.C.	Cashell	Division Engineer	M.H.D.
M.A.	Mason	Area Engineer	F.H.W.A
K.F.	Skoog	Area Engineer	M.H.D.
T.	Reetz	Landscape Architect	U.S.F.S.
W.H.	MacKenzie	District Ranger	U.S.F.S.
P.	Waters	Forest Engineer	U.S.F.S.
W.A.	Sanderson	Highway Engineer, RD Missoula FS	
S.C.	Fetter	Designer III	M.H.D.
S.C.	Kologi	Regional Engineer	M.H.D.

The following items were discussed:

1. The beginning point of the subject project, and ending point for the Federal Highway Administration's MacDonald Pass - West project, was established at Station 235±. The Forest Service requested that the construction in the area of the pass be confined to one project because of the many facilities they have in the area. It was agreed that this construction would be handled as a part of the subject project. It was pointed out that this will require a change in programming becuase it will extend the project into another financial district.

2. The alignment in the vicinity of the pass was moved to the north to minimize the encroachment on Forest Service facilities in that area. The Forest Service indicated that the alignment as now shown was acceptable to them. Also the grade had been raised as requested by the District Engineer in order to minimize drifting problems.

3. The alignment between Station 345± and Station 385± had been shifted to reduce a large fill at Station 364±. The Forest Service felt that additional study should be made in this area in an effort to reduce the impact on the landscape. It was agreed that we would try to develop a more curvilinear alignment that would reduce our cut and fill scars.

(con't)

Avoid Verbal Instructions

4. The alignment between Station 430± and Station 455± had been projected to eliminate encroachment on the Girl Scout Camp. It was felt that the alignment as now developed will accomplish this with some minor adjustments in fill slopes.

The location can be considered firm with the exception of the area between Station 330± and Station 385±, which will be given additional study.

32-KFS:sp

cc: K.F. Skoog

K F Skoog
Ken F. Skoog, Area Engineer

S. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To S.C. Kologi, P.E., Regional Engineer, West
Date November 24, 1970

From K.F. Skoog, P.E., Area Engineer, West
Subject: F 249 (21)
Mac Donald Pass-E.

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W.H. MacKenzie	District Ranger	U.S.F.S.
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(con't)

Avoid Verbal Instructions

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32-KFS:sp

cc: K.F. Skoog

K F Skoog

Ken F. Skoog, Area Engineer

Memorandum

MONTANA HIGHWAY COMMISSION
RECEIVED
SEP 18 1970
HELENA, MONTANA

TO : State Highway Commission - 32 SCK
Helena, Montana

DATE: September 17, 1970

In reply refer to: 08-24.4 DA2

FROM : H. N. Stewart, Division Engineer
Helena, Montana

By: E. B. Erickson
District Engineer

SUBJECT: Montana FH Route 28, McDonald Pass - West
F 249(21), McDonald Pass - East

This letter will confirm agreement to forgo a route hearing on either of the two projects mentioned but to hold a combined corridor and design hearing at such time as the projects have progressed to the point warranting such a hearing.

The determination was reached following a July 16 field review of proposals presented by FHWA and the State Highway Department which:

1. are not on new location or,
2. would not have a substantially different social, economic or environmental effect or,
3. would not essentially change the layout or function of connecting roads or streets.

We will assume mutual agreement as discussed with your office September 14, 1970 unless otherwise advised.

Date Recd. Proconst. 9-18-70

Act	Info	MAIL ROUTE	Attach	Initial
		30 GCP | RMH		
		30 Field Design		
		30 Surfacing Design		
		31 [illegible] Engineers		
	✓	32 West Region		
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		35 Urban		
		36 [illegible]		
	✓	37 [illegible]		
		38 Sec. Roads		
		39 Consultant Design		
	✓	File		

Act	Inf		
		RETURN TO M & F	✓
		MAY BE RETAINED	
	/	STATE HWY. ENGR.	
		CHIEF COUNSEL	
		ASST. S. H. E. ADMIN.	
		ACCOUNTING	
		PLANNING SURVEY	
		ASST. S. H. E. ENGIN.	
		BRIDGE	
	✓	PRECONSTRUCTION	
		RIGHT OF WAY	
		ASST. S. H. E. OPER.	
		CONSTRUCTION	
		MAINTENANCE	
		MATERIALS	
		OTHER	

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

Fetter

Skoog F249(2

MONTANA HIGHWAY CO

HELENA, MONTANA 59601

July 22, 1970

32-SCK

F249(21)
MacDonald Pass Eas

US Department of Transportation
Federal Highway Administration
Bureau of Public Roads
Helena, Montana 59601

Gentlemen:

Attached is a copy of an interdepartmental memorandum dated 7-22-70 summarizing the results of a recent meeting on the subject project and the MacDonald Pass West Project.

We will appreciate your concurrance in the comments pertaining to the MacDonald Pass East project.

32-SCK:sm

Enclosure

cc: J.R. Beckert w/attach
R.B. Dundas w/attach
R.E. Champion w/attach
S.C. Kologi w/attach
USFS Regional Forester Msla. w/attach
USFS Forest Supervisor Helena w/attach

Very truly yours,

LEWIS M. CHITTIM, P.E.,

BY
Grover O. Powers, P.E.,
Preconstruction Engineer

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Grover O. Powers, P.E., Preconstruction Eng. Date July 22, 1970

From S.C. Kologi, P.E., Regional Engineer, West Subject: FHP 28 MacDonald Pass
West
F249 (21)
MacDonald Pass East

On Thursday July 16, 1970 the following personnel assembled in the BPR's conference room to review preliminary plans for the subject projects:

Richard Dundas	District Engineer	MHC
John C. Cashell	Division Engineer	MHC
E.M. Pankey	R/W Agent	MHC
Stephen C. Kologi	Regional Engineer	MHC
Ken Skoog	Area Engineer	MHC
Samuel C. Fetter	Designer	MHC
Erick Erickson	District Engineer	BPR
M.A. Mason	Area Engineer	BPR
Ralph Frame	Area Engineer	BPR
Ray Jensen	Area Design Engineer	BPR
Jack Schultz	Landscape Architect	USFS
Parley Waters	Forest Engineer	USFS
Don MacDonald	Preconstruction	USFS
Fred Haller	Staff Assistant	USFS

After considerable review and discussion in the office, most of the group reviewed the projects in the field.

A brief summary of the meeting follows:

The typical section to be used for both projects was discussed. The BPR has based preliminary studies on a three lane with a 52 foot top and the State has been using a three lane with a 50 foot top. As a minimum four lane design would have only a 56 foot top, it was the general concensus of opinion that the four lane design should be given very serious consideration.

Fencing for the projects was discussed and it was decided that because of the livestock problem, both projects should be fenced throughout.

Two alternate alignments were presented by the BPR between Station 20± and Station 100± on the west side of the pass. It was agreed that the alternate which followed the PTW fit the terrain the best and that the "cut across" line should not be given further consideration.

(con't)

The BPR indicated that they would give further study to the area between Station 110± and Station 140± in an attempt to lessen encroachment on the beaver pond and MacDonald Creek.

Also, they indicated that they would move their first tangent to the right to allow for a better approach to the Mullan Pass Road.

The current split between the two projects is at Station 250+00 which is the summit and the Powell-Lewis and Clark county line. Because of their involvement in the summit area the Forest Service would prefer that the entire summit area be in one project or the other. The project split will therefore be moved back to Station 235± or ahead to Station 275±.

Also, the Forest Service requested that the alignment be moved closer to the PTW from Station 245± to Station 265± to keep it as far as possible from their campground facilities. We will investigate this matter.

There are three approaches from the south in the summit area. There was considerable discussion regarding whether these should all be frontaged to one central approach or whether they should enter individually. No decision was reached.

There was also considerable discussion regarding the approach to Frontier Town but here again no decision was reached.

There was some discussion regarding the possibility of including a rest area either near the summit or someplace on the east slope. Probably a nice rest area that would receive considerable use could be developed however the area would not be very far from the Avon rest area or from Helena.

It was the general feeling that something should be done to reduce the fill height between Station 360± and Station 366±. We will give this area further study.

It was felt that from Station 444± to Station 450± the alignment should be adjusted so that the fills on the right catch on the PTW rather than spilling over the edge.

Other than the areas mentioned above, the alignment on both sides of the pass was considered satistactory.

The BPR indicated that they would proceed this summer to establish the MacDonald Pass West alignment on the ground, target it and the section corners, and secure ground control for an aerial survey.

32-SCK:sm

Stephen C. Kologi
Steve C. Kologi, P.E.,
Regional Engineer, West

SECTION 13

GEOLOGY REPORTS

INTER-DEPARTMENTAL MEMORANDUM

MONTANA STATE HIGHWAY COMMISSION

To L. B. Fox, P.E., Materials Engineer

Date November 18, 1971

From G. O. Powers, P.E., Preconstruction Engineer

Subject: F 249(21)
MacDonald Pass -
East

The subject project is currently in survey status and most of the centerline is staked. The attached plans and cross-sections were used for the reconnaissance study and are the basis for the survey presently being made. Although there may be some minor discrepancies between these plans and the field survey, the alignment and the cut and fill heights should provide a good approximation of our final design.

In order that we can proceed with the planning report and design of the project as soon as the field survey is completed, it is requested that you provide a complete geological study of the project. During reconnaissance work on the project, the following questions came up which we hope can be answered by your study:

1. Cut and fill slope design, with particular attention to reduction of construction scars.
2. Frost heave problems on the PTW which should be avoided on new construction (See attached memo).
3. The Forest Service has expressed concern about their water supply for Porcupine Campground. Is any special treatment required to perpetuate this water supply?

You are hereby authorized to conduct whatever drilling and other subsurface investigation that may be required for a complete study.

If you have any questions or require any additional information, please feel free to contact us.

Grover O. Powers

Grover O. Powers, P.E.,
Preconstruction Engineer

32-SCK;KFS:sf

cc: R. B. Dundas
✓S. C. Kologi

Attachment

Avoid Verbal Instructions

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To S. Kologi, P.E., West Region Engineer

From Lehman B. Fox, P.E., Materials Engineer

Date November 16, 1970

Subject: F-249 (21)
McDonald Pass East

Our Geology Section has examined the preliminary line of the subject project and offers these comments.

Overall, we can see no reason why, from a materials aspect, the road cannot be built along the proposed alignment and with essentially the same slope design as previously suggested.

Specifically, however, we anticipate about ten (10) drill holes along this alignment due to wet areas around stations 290+00±, 336+30±, 353+00±, 396+50±, and various other potential problem areas. We also anticipate a backslope redesign in the areas of 370±, 382± and 460±. These will need to be designed to follow a controlling joint system. Yardages, however, should not change drastically.

Finally, we would suggest that it might be advisable to design an additional five feet of ditch through the larger through cuts to facilitate snow and rock removal.

LBF/DAW/GA/lch

cc: L. B. Fox
Geol. File

Lehman B. Fox

Avoid Verbal Instructions

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Grover O. Powers, P.E., Preconstruction Engineer

From Lehman B. Fox, P.E., Materials Engineer

Date April 20, 1970

Subject: F 249 (21)
McDonald Pass E.

Refer. Memo dated 2-18-70
Mr. Powers to Mr. Fox

As requested, our department has undertaken a preliminary investigation of backslopes, fill slopes, and swell estimation. It must be understood that our recommendations at this point are only preliminary, and subject to change as a more thorough investigation is undertaken. As of this time, due to snow conditions, we have been unable to investigate the proposed line in its entirety. We have mapped the strike and dip of joints as they are found along the PTW, and if they are consistent back into the mountain then these recommendations could be fairly accurate. If not, then these recommendations may be in error as much as 30% ±.

Concerning swell recommendations, we have done no work in the McDonald Pass area, but investigations in other locations along the Boulder Batholith in similar rocks indicate an average value of 15% swell should not be too far out of line.

The following recommendations are offered for preliminary design of cut slopes and fill slopes along the proposed route:

Station 240+00 to Station 343+00 - Small cuts and fills.

Cuts no steeper than 2:1.

Fills no steeper than 1½:1.

Station 343 to 351+.

Cuts left of Centerline should be "presplit" at ¼:1 with 20' benches at 30'.

Cuts Right of Centerline should be along the joint plane that dips into the roadway at 63° ± at Station 345, and then steepens to near vertical at Station 350.

Station 351+ to Station 360.

Fills 1½:1 max. steepness.

Cuts Left Centerline ¼:1 w/bench at 30'.

-more-

Avoid Verbal Instructions

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Grover O. Powers

From Lehman B. Fox

Date April 20, 1970

Subject: F 249 (21)

Cuts Right of Centerline should be daylighted at about 2:1, but no steeper than ¼:1.

Station 360 to 366+.

Fills no steeper than 1½:1.

This section would involve an extremely large fill Right of Centerline and would destroy much vegetation. The vegetation that is present (Aspens) could be indicative of high surface moisture that could pose potential landslide problems. Preliminarily, we would suggest moving line into the mountain in this area.

Station 366+ to 375.

Cut slopes left and right of Centerline ¼:1 "presplit" with 20' bench at 30'; possible flattening above bench.

Possible place for 600' Tunnel.

Possibly could have ¼:1 on both sides w/no bench.

Station 375 - End of Project.

Fill slopes no steeper than 1½:1.

Cut slopes 2:1 except at rock outcrops where cuts could be steeper.

As a more reliable line is established, more investigation from our Section will proceed. Right-of-Way permits must be obtained so that we can enter for drilling, seismic study and possible dozer work as needed.

LBF/DAW/GRA/lch

cc: J.R.Beckert
R.B. Dundas/Butte
S. C. Kologi/Precon.
L.B. Fox
Geol. File

S. H. Comm.—Form 4-A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To L.B. Fox, P.E., Materials Engineer

Date February 18, 1970

From G.O. Powers, P.E., Preconstruction Engineer

Subject: F 249 (21) MacDonald Pass

This is to authorize whatever investigation that may be required for preliminary backslope recommendations for the subject project.

We are furnishing you two sets of 1" = 100' plan-profile showing our first attempt at line and grade.

No doubt, we will have other alternates after we see a quantity run and catch limits for this one.

So all we need at this time are preliminary slope and swell recommendations so that we can get some idea of what we are getting into.

For a typical section, you can assume that we will have a 12 foot driving lane and a 10 foot shoulder right of ℄ and a 12 foot driving lane, a 12 foot climbing lane, and a 4 foot shoulder left of ℄ (50 foot top.) Ditch width will depend on height of cut as per Std. Sheet # 39.

If you have any questions or require any additional information, please feel free to contact us.

Stephen C. Kologi, P.E.,
Regional Engineer, West

32-GOP:SCK:md

cc: J.R. Beckert
R.B. Dundas (with prints)
S.C. Kologi ✓

Grover O. Powers

Grover O. Powers, P.E.,
Preconstruction Engineer

Avoid Verbal Instructions

SECTION 14

PROGRAMMING AND AUTHORIZATION REPORTS

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Jack R. Beckert, P.E., Assistant State Highway Engineer, Engineering
Date November 24, 1970

From Grover O. Powers, P.E., Preconstruction Eng.
Subject: F 249 (21)
MacDonald Pass East

This is to request program action required for the continued development of the subject project.

At the time the P.E. program for the project was prepared it was assumed that a three lane facility would be provided. Since then it has developed that a four lane facility is considered more appropriate.

We therefore request that the P.E. program be modified accordingly.

At the summit the Forest Service has requested that the entire summit area be included in one project or the other rather than have a break right at the summit.

It will be no particular problem for us to lengthen our project some 1500 feet to the west except that it is in a different county and financial district.

We should therefore have a new P.E. program for $5,000 for 0.3 miles. This would be for a future $150,000 construction project. Here again, a four lane facility is anticipated.

32-GOP:SCK:sp

cc: R.B. Dundas
S.C. Kologi
Ray Anderson

Grover O. Powers

Grover O. Powers, P.E.,
Preconstruction Engineer

Avoid Verbal Instructions

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATI
FEDERAL HIGHWAY ADMINISTRATION

DEC 23 1970
HELENA, MONT.

TO : State Highway Commission
Helena, Montana
19-RGA

DATE: December 22, 1970

In reply refer to: 08-24 EC

FROM : H. N. Stewart
Division Engineer
Helena, Montana

By: L. D. Priestley
Assistant Engineering Coordinator

SUBJECT: Montana Federal-aid Rural Primary Program

Approved effective today is the stage 2 programing of the following project:

Item	Project	Location	Phase
8	RF 249(21)	MacDonald Pass East 6.8 Miles (Garrison-Helena)	P. E.

This program replaces the program for F 249(21) to utilize Rural Primary funding.

The previous authorization to proceed with the route study phase of the preliminary engineering will remain effective with the effective date of October 31, 1969. At the time of previous authorization you were authorized a total cost of $25,000 of which $16,535 in Federal funds was obligated to cover the expense. No additional authorization is made at this time. Subsequent phases will be authorized pending location approval and related public hearing requirements.

* Attached is one approved copy each of forms PR-1 and PR-37.

RETURN TO H & F
MAY BE RETAINED
STATE HWY. ENGR.
CHIEF COUNSEL
ASST. S.H.E. ADMIN.
ACCOUNTING
PLANNING SURVEY
ASST. S.H.E. ENG'T
DESIGN
PRECONSTRUCTION
RIGHT OF WAY
ASST. S.H.E. OPER.
CONSTRUCTION
MAINTENANCE
MATERIALS

* Attachments

BUY U.S. SAVINGS BONDS ON THE PAYROLL SAVINGS PLAN

r 10, 1970

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

FORM PR-1
(REV. 7-61)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

229

ON (45 typewriter spaces)	ADT	PRESENT	FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN CODE	ITEM NO.
Pass East 6.8 Miles ison - Helena) 65		1031 (66)	2250 (70)	1988 (71) (72)	08	Montana	24 (2) (3)	073 (4) (5)	8 (14) (19)

writer	EMERG. YR.	FH ROUTE NO.	SUPV AGCY	DA CLASSIF.	DA AREA		PL. AUTH YR	PROJECT NUMBER PREFIX LETTER (S)	NUMBER	SEQ. NO.	I. Projects Only POST MI.	DESIG.
62	(63) (65)	(66) (68)	(69)	(70)	(71)	(72) (73)	(74) (75)	14 RF 23	7 249	(21) 13	(24) (26)	27

	COUNTY NAME	CODE	PROGRAM STAGE
RF Primary	Lewis & Clark - Powell	049 077 (14) (16)	☐ 1 OR ☒ 2

ROUTE NO.	FEDERAL-AID	STATE	U.S.
	8	(32) (36)	(37) 12 (41)

STEP	TERMINI (Full description)	MILES	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK (Full description)
53		(54) (58)	(59) (66)	(67) (76)			
3	Begins about 0.3 miles west of Powell-Lewis & Clark Co. Line and extends easterly 6.8 miles	6.8	105,000	69,447	35,553		P.E. for the rte. stud & design of a new 4-lane rdwy. up east slope of McDonald Pass and .3 mile westerly o Summit. Shoulder widths and Median will depend upon need, adaptability to terrai and such -
			(3,000,000)				
	PROJECT TOTALS	6.8	105,000	69,447	35,553		
ES			(16) (23)	(24) (33)			

REMARKS Program previously was F 249(21). Request all authorization dates of F 249(21) be maintained.

December 10, 1970

Budge

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W.O.

FORM PR-1
(REV. 7-61)

FEDERAL-AID PROGRAM DATA

(PPM 21-1)

CARD	REPORT NUMBER	PROJECT LOCATION *(45 typewriter spaces)*		PRESENT	FUTURE	YEAR	REGION	STATE NAME
2	(19) (20)	McDonald Pass East 6.8 Miles (Garrison - Helena) 21 65	ADT	1031	2250 (66) (70)	1988 (71) (72)	08	Monta

CARD	CHARACTER OF PROPOSED WORK *(35 typewriter spaces)*	EMERG. YR.	FH ROUTE NO.	SUPV AGCY	DA CLASSIF.	DA AREA		PL. AUTH YR	PROJECT PREFIX LETTER(S)
3	P.E. 28 62	(63) (65)	(66) (68)	(69)	(70)	(71)	(72) (73)	(74) (75)	RF 14

CARD				
4	CLASS OF FEDERAL FUNDS RF Primary		COUNTY NAME Lewis & Clark - Powell	
	NAME OF URBAN AREA 17-31	ROUTE NO.	FEDERAL-AID 8	STATE (32)

CARD 5	LINE NO.	CHANGE CODE	PROJECT COUNT	WORK CLASS	WORK TYPE	STEP	TERMINI *(Full description)*	MILES	ESTIMATED PROJECT COST BY PHASES TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	C
1	(14-15)	(16	41	42	43 46	53		(54) (58)	(59) (66)	(67) (76)		
5	10			1	**PE**	3	Begins about 0.3 miles west of Powell-Lewis & Clark Co. Line and extends easterly 6.8 miles	6.8	105,000	69,447	35,553	
5					**ROW**							
5					**CONST** (CODE)				(3,000,000)			

CARD	CODE	PREPARED BY	PROJECT TOTALS	MILES	TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS
1	1			6.8	105,000	69,447	35,553
1	14	PROGRAM APPROVAL DATES			(16) (23)	(24) (33)	

REMARKS Program previ
all authorization da

EDITION OF 4-61 MAY BE USED

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

DEC 23 1970
HELENA, MONTANA

TO : State Highway Commission
Helena, Montana
19-RGA

DATE: December 22, 1970

In reply refer to: 08-24 EC

FROM : H. N. Stewart
Division Engineer
Helena, Montana

By: L. D. Priestley
L. D. Priestley
Assistant Engineering Coordinator

SUBJECT: Montana Federal-aid Primary Program

Approved effective today is your requested revision to withdraw the stage 2 programing of the following project:

Item	Project	Location	Phase
1328	F 249(21)	MacDonald Pass East - 6.5 Miles (Garrison - Helena)	P. E.

This program is being withdrawn to transfer the funding from Primary to Rural Primary.

* Attached are an informational copy of form PR-9 and an approved copy of form PR-37.

* Attachments

Act	Inf		
		RETURN TO M & E	
		MAY BE RETAINED	
	/	STATE HWY. ENGR.	
		CHIEF COUNSEL	
		ASST. S. H. E. ADMIN.	
		ACCOUNTING	
		PLANNING SURVEY	
		ASST. S. H. E. ENGR.	
		DESIGN	
		PRECONSTRUCTION	
		RIGHT OF WAY	
		ASST. S. H. E. OPER.	
		CONSTRUCTION	
		MAINTENANCE	

BUY U.S. SAVINGS BONDS ON THE PAYROLL SAVINGS PLAN

Budget Bureau No. 41-R2068; Approval Expires February 28, 1966

FORM PR-9
(REV. 4-61)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

REQUEST FOR APPROVAL OF INDIVIDUAL PROJECT PROGRAM CHANGE
(PPM 21-1 AND 22-1)

TION (45 typewriter spaces)			FUTURE	YEAR	REGION	STATE NAME	STATE CODE	APPN. CODE	ITEM NO.
ald Pass East - 6.5 Miles rison - Helena) 65	ADT	1301	2550 (66) (70)	1988 (71) (72)	08 (74) (75)	Montana	24 (2) (3)	012 4 6	1328 (14) (18)

paces)	NATL. FOREST	FOR MISCELLANEOUS FUNDS ONLY						PROJECT NUMBER		I PROJECTS ONLY	
		FH ROUTE NO.	SUPV AGCY	DA CLASSIF.	DA AREA	EMERG. YR.	PL AUTH YR.	PREFIX LETTER(S)	NUMBER-AGR. NO.	POST MI. MI.	DESIG.
62	(63) (65)	(66) (68)	69	70	71	72 73	74 75	(RF) F 14 23	249(21) 7 13	(24) (26)	27

Primary to RF Primary

COUNTY NAME Lewis & Clark

CODE 14 049 16

F.A. SYSTEM

RTE NO. FEDERAL AID STATE (32) (36) U.S. (37) (41)

STATUS	ITEM NUMBER	PROJECT NUMBER	TERMINI	MILES	PROJECT COST: TOTAL COST	PROJECT COST: FEDERAL FUNDS	PROJECT COST: STATE FUNDS	CHARACTER OF PROPOSED WORK
ITEM AS NOW PRO-GRAMED	1328	F 249(21)	Begins at the Powell-Lewis & Clark Co. Line and extends easterly to a point immediately east of Rimini cutoff - 6.5 Mi.	(54) (58) 6.5	(59) (66) 100,000 (2,000,000)	(67) (76) 66,140	33,860	P.E. for the Rte. study and design of new rdwy. up east slopes of Continental Divide - propose 3-lane - 2 west bound traffic and one east bound with one west bound as passing lane.
			PROJECT TOTAL	6.5	100,000	66,140	33,860	
RE-QUESTED REVISION	1328	RF 249(21)	Begins about 0.3 miles west of Powell-Lewis & Clark Co. Line and extends easterly 6.8 Mi.	6.8	105,000 (16) (23)	69,447 (24) (33)	35,553	P.E. for Rte. study and design for a new 4-lane highway up McDonald Pass.
ted Yes ☐ CODE 11	PROJECT WITHDRAWN YES ☐ CODE 2		PROJECT TOTAL	6.8	105,000	69,447	35,553	

REASON FOR CHANGE: To change from 3 lane to 4 lane roadway-- change to RF financing and to change western termini.

projects. Prepare a form PR-1 for all
tion.

PROGRAM REVISION REQUESTED	RECOMMENDED	APPROVED
DATE December 16, 1970	DATE	DATE
SIGNATURE	SIGNATURE	SIGNATURE
STATE HIGHWAY ENGINEER	TITLE	TITLE

project to another, or covers joint financing, show both classes of funds involved.

LETE AFTER 7-1-61

USCOMM-DC 48003-P61

Budget Burea

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W.O.

FORM PR-9
(REV. 4-61)

REQUEST FOR APPROVAL
OF INDIVIDUAL PROJECT PROGRAM CHANGE
(PPM 21-1 AND 22-1)

CARD 2
REPORT NUMBER (19) (20)
PROJECT LOCATION (45 typewriter spaces) 21: McDonald Pass East - 6.5 Miles (Garrison - Helena) 65
ADT: 1301
FUTURE (66) (70): 2550
YEAR (71) (72): 1988
REGION (74) (75): 08
STATE NAME: Mont

CARD 3
CHARACTER OF PROPOSED WORK (35 spaces) 28: P. E. 62
NATL. FOREST (63) (65)
FOR MISCELLANEOUS FUNDS ONLY
FH ROUTE NO (66) (68)
SUPV AGCY 69
DA CLASSIF. 70
DA AREA 71
EMERG. YR. 72 73
PL AUTH YR 74 75
PROJECT NU
PREFIX LETTER(S) 14: (RF) F 23

CARD 4
CLASS OF FEDERAL FUNDS [1]: Primary to RF Primary
COUNTY NAME: Lewis & Clark
NAME OF URBAN AREA 17-31
F.A. SYSTEM
RTE NO.
FEDERAL AID

CARD	LINE NO.	CHNG CODE	PRO-JECT COUNT	WORK CL	WORK TYPE	STEP	STATUS	ITEM NUMBER	PROJECT NUMBER	TERMINI	MILES	PROJECT COST TOTAL COST	PROJECT COST FEDERAL FUNDS	PROJECT COST STATE FUNI
1	(14-15)	16	41	42	43 - 46	53					(54) (58)	(59) (66)	(67) (76)	
5					PE ROW CONST		ITEM AS NOW PRO-GRAMED	1328	F 249(21)	Begins at the Powell-Lewis & Clark Co. Line and extends easterly to a point immediately east of Rimini cutoff - 6.5 Mi.	6.5	100,000 (2,000,000)	66,140	33,860
										PROJECT TOTAL	6.5	100,000	66,140	33,860
5					PE ROW CONST		RE-QUESTED REVISION	1328	RF 249(21)	Begins about 0.3 miles west of Powell-Lewis & Clark Co. Line and extends easterly 6.8 Mi.	6.8	105,000 (16) (23)	69,447 (24) (33)	35,553
										PROJECT TOTAL	6.8	105,000	69,447	35,553

CARD 1 A form PR-1 or PR-9 has been submitted within the last 7 days. Yes ☐
1 COLUMN 14 ⟶ CODE 11
PROJECT WITHDRAWN YES ☐ CODE 2

REASON FOR CHANGE: To change from 3 lane to 4 lane roadway-- change to western termini.

NOTE: Projects splitting into two or more projects. Prepare a form PR-1 for all new projects resulting from such action.

DATE OF INITIAL APPROVAL: October 31, 1969

OTHER:

PROGRAM REVISION REQUESTED
DATE: December 16, 1970
SIGNATURE
STATE HIGHWAY ENGINEER

RECOMMENDED
DATE
SIGNATURE
TITLE

DATE
SIGNATURE
TITLE

---

[1] If revision includes transfer from one class of project to another, or covers joint financing, show both classes of funds involved.

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE AFTER 7-1-61

S. H. COMM.--FORM 4

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To R. E. O'Leary, P.E., Chief Accountant

From G. O. Powers, P.E., Preconstruction Engineer

Date November 12, 1969

Subject: F 249(21)
MacDonald Pass East

Please distribute charge numbers for the subject project.

32-GOP:SCK:sp

cc: J. R. Beckert
S. C. Kologi ✓

Grover O. Powers

Avoid Verbal Instructions

Grover O. Powers, P.E., Preconstruction Engineer

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

S Kelly

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Memorandum

RECEIVED
NOV 6 1969
HELENA, MONTANA

Bureau of Public Roads

DATE: October 31, 1969

In reply refer to: 08-24-EC

TO : State Highway Commission
Helena, Montana 19:DBD

FROM : Grant E. Meyer, Division Engineer
Helena, Montana

By: Roy N. Jones
Assistant Division Engineer

SUBJECT: Montana Federal-aid Primary Program

Approved effective today is the stage 2 programming of the following project:

Item	Project	Location	Phase
1328	F 249(21)	McDonald Pass East 6.5 Miles	P.E.

You are authorized to proceed with the route study phase of the preliminary engineering with $25,000 being obligated for this phase, ($16,535 Federal funds). Subsequent phases will be authorized pending location approval and related public hearing requirements.

* Attached is one approved copy each of forms PR-1 and PR-37.

* Attachments

1 2

2 P Cert.

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

F 249(21)

Proposed project is over one of the most highly travelled routes traversing the Continental Divide used extensively by intrastate travel, tourists, sportsmen and such. Work from Continental Divide easterly will connect to proposed project (F 249(18)P.E.) to be built by Montana Highway Department. Work from Divide westerly will be by the Federal Government on a Forest Highway Project. All of this project was constructed under FHP projects and would be eligible for preconstruction as such except lack of money for such a project would preclude construction in the forseeable future and this project is long overdue in reconstruction considering the traffic counts, vital access to a capital city and relatively high cost of maintenance due to snow removal and de-icing factors.

To the east this road will connect to a 24' roadway with a 20' surface in place presently. The east section is planned for reconstruction 1972.

To the west the roadway from the top of the pass is a 24' roadway with predominately 22' surface. This roadway will connect to a proposed construction project in July 1973 for widening of three bridges as stage construction to reconstruction of roadway in place.

A public hearing will be held if deemed necessary.

There are no airports, railroads, or water developments involved in this project. No major structures are involved in this roadway as presently built.

There is the possibility at construction stage a portion of this proposed project will be safety.

Budget Bureau

MONTHLY TRANSACTION NO.

DATE SUBMITTED TO W. O.

FORM PR-1
(REV. 4-61)

FEDERAL - AID PROGRAM DATA

(PPM 21-1)

CARD 2	REPORT NUMBER (19) (20)	PROJECT LOCATION *(45 typewriter spaces)* 21 65		PRESENT	FUTURE (66) (70)	YEAR (71) (72)	REGION	STATE NAME
		McDonald Pass East 6.5 Miles (Garrison - Helena)	ADT	1301	2550	1988	08	Mon

CARD 3	CHARACTER OF PROPOSED WORK *(35 typewriter spaces)* 28 62	NATL. FOREST (63) (65)	FH ROUTE NO. (66) (68)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72) (73)	PL. AUTH YR (74) (75)	PROJECT NUMB PREFIX LETTER (S) 14 23	NU 7
	P. E.								F	

CARD 4	CLASS OF FEDERAL FUNDS	Primary	COUNTY NAME	Lewis & Clark
	NAME OF URBAN AREA 17-31		ROUTE NO.	FEDERAL-AID 8 (32) · STATE (36) (37

CARD 5	LINE NO.	CHANGE CODE	PROJECT CODE	WORK CLASS	WORK TYPE	STEP	TERMINI *(Full description)*	MILES	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER
1	(14-15)	(16	41	42	43 46	53		(54) (58)	(59) (66)	(67) (76)		
5					PE		Begins at the Powell-Lewis & Clark Co. Line and extends easterly to a point immediately east of the Rimini cutoff - a distance of 6.5 miles.	6.5	100,000	66,140	33,860	
5					ROW							
5					CONST (CODE)				(2,000,000)			

CARD 1	CODE 1	PREPARED BY	PROJECT TOTALS	6.5	100,000	66,140	33,860	
1	14	PROGRAM APPROVAL DATES			(16) (23)	(24) (33)	REMARKS	

See Bac

Budget Bureau No. 41-R2067; Approval Expires February 28, 1966

FORM PR-1
(REV. 4-61)

FEDERAL - AID PROGRAM DATA

(PPM 21-1)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

TION (45 typewriter spaces) Pass East 6.5 Miles Garrison - Helena) 65	ADT	PRESENT 1301	FUTURE 2550 (66) (70)	YEAR 1988 (71) (72)	REGION 08	STATE NAME Montana	STATE CODE 24 (2) (3)	APPN CODE 012 (4) (9)	ITEM NO. 1328 (14) (18)

ypewriter 62	NATL. FOREST (63) (65)	FH ROUTE NO. (66) (68)	SUPV AGCY (69)	DA CLASSIF. (70)	DA AREA (71)	EMERG. YR. (72) (73)	PL. AUTH YR (74) (76)	PROJECT NUMBER PREFIX LETTER (S) 14 F 23	NUMBER 7 249(21)	SEQ. NO. 13	I. Projects Only POST MI. (24) (26)	DESIG. 27

Primary

COUNTY NAME Lewis & Clark CODE 049 (14) (16)

ROUTE NO. FEDERAL-AID 8 (32) STATE (36) (37) U.S. 12 (41)

PROGRAM STAGE ☐ 1 OR ☒ 2

STEP	TERMINI (Full description)	MILES	ESTIMATED PROJECT COST BY PHASES: TOTAL ESTIMATED COST	FEDERAL FUNDS	STATE FUNDS	OTHER FUNDS	CHARACTER OF PROPOSED WORK (Full description)
53 238-1	Begins at the Powell-Lewis & Clark Co. Line and extends easterly to a point immediately east of the Rimini cutoff - a distance of 6.5 miles.	(54) (58) 6.5	(59) (66) 100,000	(67) (76) 66,140	33,860		P.E. for the Route study and design of a new Roadway up the east slopes of the Continental Divide (McDonald Pass) with especial emphasis on eliminating horizontal curves and to include a third traffic lane (truck lane). Propose 3 traffic lanes. 2 W. bound; one east bound with shoulders to conform to minimum AASHO standards—climbing lane only where steep ascent dictates.
			(2,000,000)				
	PROJECT TOTALS	6.5	100,000 (16) (23)	66,140 (24) (33)	33,860		

:S

REMARKS

See Back

USCOMM DUSCOMM-DC 48905-P61

SECTION 15

SURVEY AUTHORIZATION AND MEMORANDUMS PERTAINING TO DESIGN

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

MONTANA STATE HIGHWAY COMMISSION

To Richard B. Dundas, P.E., District Engineer

Date August 12, 1971

From Grover O. Powers, P.E., Preconstruction Engineer

Subject: F 249(21)
MacDonald Pass - East
Survey Authorization

You are authorized to make a 6.5 mile survey of the subject project. Our previous survey authorization of December 10, 1970, did not include the section from Station 330± to Station 385±. The alignment in this area is now resolved and you may proceed with the entire survey. Attached are two (2) sets of the preliminary plans showing the approved alignment.

This will be a complete survey for future ROW, IC, and reconstruction of the existing two-lane highway to appropriate standards.

Appropriate charge numbers have been distributed by the Accounting Division.

Form No. 111 will be required. Gravel exploration for surfacing and concrete aggregates will be required on Form No. 92.

Please advise the Construction Division of personnel used or of additional manpower required for this survey. Also, please notify Helena Headquarters of the date work starts.

The hardshell should be plotted on a reproducible at a scale of 1" = 100'.

32-GOP;SCK;KFS:gm

cc: J.R. Beckert
H.G. Wheeler
G.E. Flemming
A.W. Jones
R.E. Champion
J.L. Prebil
L.B. Fox
J.C. Cashell
E.H. Larson
P.E. Poirier
S.C. Kologi
R.G. Anderson
E.G. Murphy
SHOP
Fish and Game
Forest Service - Helena
Forest Service - Missoula

Robert M. Hudnall
Avoid Verbal Instructions

for Grover O. Powers, P.E., Preconstruction Engineer

FORM FHWA-121 (12-67)

UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

Memorandum

MONTANA HIGHWAY COMMISSION
RECEIVED
AUG 10 1971
HELENA, MONTANA

TO State Highway Commission
Helena, Montana
32-SCK

DATE: August 9, 1971

In reply refer to: 08-24.2 DA2

FROM H. N. Stewart
Division Engineer
Helena, Montana

By: R. N. Jones
Assistant Division Engineer

SUBJECT: F 249(21), MacDonald Pass East

You are authorized to proceed with the field survey, right-of-way studies, and design of the entire project from station 235± to station 594+84± as requested in your July 12, 1971 letter.

We anticipate that as the design progresses some minor modifications to alternate "D" between stations 328 and 385 may prove desirable.

Date Recd. Preconst. 8/12/71

Act	Info	MAIL ROUTE	Attach	Initial
		30 GCP [illegible]		
		30 Field Design		
		30 Surfacing Design		
		31 Office Engineers		
	✓	32 West Region	✓	
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		[illegible] Consultant Design		
	✓	File		✓

Act	Info		
		RETURN TO [illegible]	
		MAY BE [illegible]	
	✓	STATE [illegible]	
		CHIEF ENGINEER	
		ASST. [illegible]	
		ACCOUNTING	
		PLANNING SURVEY	
		ASST. S.H.E.-ENGR.	
		BRIDGE	
	✓	PRECONSTRUCTION	
		RIGHT OF WAY	
		ASST. S.H.E.-OPER.	
		CONSTRUCTION	
		MAINTENANCE	
		MATERIALS	
		[illegible]	

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

August 3, 1971

32-SCK
IN REPLY REFER TO

F 249 (21)
MacDonald Pass East

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

ATTENTION: Mr. Stewart

Gentlemen:

Reference is made to our letter of July 12, 1971, requesting your approval to proceed with the field survey, right-of-way studies, and design for the subject project.

Please reply.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

32-GOP:SCK:sp

cc: J.R. Beckert
R.B. Dundas
S.C. Kologi

DIV ENGR
ENG COORD
ASST EN-CO
AUDITORS
PRO CONT

GEORGE VUCANOVICH, CHAIRMAN
HELENA

H. S. HANSON, VICE CHAIRMAN
BILLINGS

G. R. COONEY
BUTTE

WILLIAM H. KESSNER

R. E. COFFEY
WOLF POINT

JOHN D. WHEELER, SECRETARY
HELENA

FORREST H. ANDERSON
GOVERNOR

MONTANA HIGHWAY COMMISSION

HELENA, MONTANA 59601

LEWIS M. CHITTIM
STATE HIGHWAY ENGINEER

August 3, 1971

32-SCK
IN REPLY REFER TO:

F 249 (21)
MacDonald Pass East

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana 59601

ATTENTION: Mr. Stewart

Gentlemen:

Reference is made to our letter of July 12, 1971, requesting your approval to proceed with the field survey, right-of-way studies, and design for the subject project.

Please reply.

Very truly yours,

LEWIS M. CHITTIM, P.E.,
STATE HIGHWAY ENGINEER

BY Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

32-GOP:SCK:sp

cc: J.R. Beckert
R.B. Dundas
S.C. Kologi

GEORGE VUCANOVICH, CHAIRMAN
HELENA

H. S. HANSON, VICE CHAIRMAN
BILLINGS

G. R. COONEY
BUTTE

WILLIAM M. KESSNER
BLACK EAGLE

R. E. COFFEY
WOLF POINT

JOHN D. WHEELER, SECRETARY
HELENA

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Richard B. Dundas, P.E., District Engineer - Butte

From Grover O. Powers, P.E., Preconstruction Engineer

Date January 11, 1971

Subject: F 249(21)
MacDonald Pass - East

The program for the subject project has been revised and approved to include 0.3 miles in Powell County as discussed at our last location review.

Therefore, you are authorized to commence the field survey at Station 235± rather than Station 250± as authorized by our letter of December 10, 1970.

32-GOP;SCK;KFS:gm

cc: J.R. Beckert
D.B. DeVore
H.G. Wheeler
A.W. Jones
R.E. Champion
J.L. Prebil
L.B. Fox
J.C. Cashell
D.D. Gruel
P.E. Poirier
S.C. Kologi
R.G. Anderson
E.G. Murphy
Shop
Fish and Game
Forest Service - Helena
Forest Service - Missoula

Grover O. Powers

Avoid Verbal Instructions

STATE HIGHWAY COMMISSION OF MONTANA

To R.B. Dundas, P.E., District Engineer, Butte **Date** December 10, 1970

From G.O. Powers, P.E., Preconstruction Engineer **Subject:** F 249 (21)
MacDonald Pass East
Survey Authorization

Attached is a copy of a letter dated 12/8/70 from the Federal Highway Administration. You are authorized to proceed accordingly with the field survey.

The survey will begin on U.S. 12 at the Powell - Lewis and Clark County Line, Station 250±, and extend easterly approximately 6.5 miles to Station 594+80± which is the west end of the Helena West Project. From Station 330± to Station 385± the survey cannot be completed at this time because of alignment studies which are underway.

The contemplated work will consist of preliminary engineering for future ROW, IC, and reconstruction of the existing 2 lane highway to appropriate standards.

Appropriate charge numbers have been distributed by the Accounting Division.

Form 111 will be required. Also, gravel exploration for surfacing and concrete aggregates will be required on Form No. 92.

Please advise the Construction Division of personnel used or of additional manpower required for this survey. Also, please notify Helena Headquarters of the date work starts.

The hardshell should be plotted on a reproducible at a scale of 1"=100'.

32-GOP:SCK:KFS:sp

cc: J.R. Beckert
Don DeVore
H.G. Wheeler
A.W. Jones
R.E. Champion
John Prebil
L.B. Fox
J.C. Cashell
D.D. Gruel
P.E. Poirier
S.C. Kologi
R.G. Anderson
Earl Murphy
Shop
Fish and Game
Forest Service Helena
Forest Service Missoula

Grover O Powers

Grover O. Powers, P.E.,
Preconstruction Engineer

Avoid Verbal Instructions

MONTANA STATE HIGHWAY COMMISSION

To GROVER POWERS, P. E., Preconstruction Engineer

Date February 23, 1971

From JACK R. BECKERT, P. E., Assistant State Highway Engineer - Engineering

Subject: MacDonald Pass

I am transmitting herewith one copy of Lewis M. Chittim's February 17, 1971 transmittal in regard to the above-noted subject.

In returning from Missoula, I noticed that, as usual, we are having considerable frost heave problems on this section. I presume that a very adequate soil survey has been initiated so that our design will give appropriate consideration to this problem. If any problem is envisioned in obtaining all required comprehensive data please advise.

JRB/be

cc: Lewis M. Chittim

Attachment

Avoid Verbal Instructions

3 REPORTER PRTG. & SUPPLY CO.

Date Recd. Preconst. 2-23-71

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP | RMH		
		30 Field Design		
		30 Surfacing Design		
		31 Office Engineers		✓
✓		32 West Region		
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Design		
		✓ File		✓

H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Jack R. Beckert, P. E., Assistant State Highway Engineer-Engr. Date February 17, 1971

From Lewis M. Chittim, P. E., State Highway Engineer Subject: MacDonald Pass

In traveling up MacDonald Pass on February 16, I noted a number of places where there is frost heaving going on, and I am wondering if it may not be well to have some of your design people check these out and spot them so that corrective action can be taken when we are getting ready to build this new section. The worst part of them seem to be within 3/4 of a mile on each side of our section house.

LMC:ld

Lewis M. Chittim

Avoid Verbal Instructions

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To R.B. Dundas, P.E., District Engineer, Butte
Date February 25, 1971

From S.C. Kologi, P.E., Regional Engineer, West
Subject: F-249 (21)
MacDonald Pass-East

The attached memorandums discuss frost heave problems on the subject project. It is requested that the soil survey in this area pay particular attention to frost heave and ground water problems.

32-SCK:KFS:sp

cc: J.R. Beckert
L.B. Fox w/attach
G.O. Powers
~~K.F.~~ Skoog

Stephen C. Kologi
Stephen C. Kologi, P.E.,
Regional Engineer, West

S. H. Comm.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

STATE HIGHWAY COMMISSION OF MONTANA

To Jack R. Beckert, P.E., Ass't State Highway Engineer
Engineering
From Grover O. Powers, P.E., Preconstruction Engineer

Date July 26, 1971

Subject: F 249(21)
MacDonald Pass-East
FHP 28-1(1)
MacDonald Pass-West

Reference is made to your memo of July 23, 1971 with regard to fencing on the subject projects. It has been mutually agreed between the Federal Highway Administration, the Montana Highway Department, and the U.S. Forest Service that fencing should be provided on both projects.

As plans develop we will see that the planning is implemented so as to eliminate the hazardous situations which presently exist in the vicinity of the pass.

By Grover O. Powers
Grover O. Powers, P.E.,
Preconstruction Engineer

GOP/SCK/KFS/lm

cc: R.B. Dundas
S.C. Kologi

Avoid Verbal Instructions

S. H. Comm.—Form 4

INTER-DEPARTMENTAL MEMORANDUM

MONTANA STATE HIGHWAY COMMISSION

To GROVER POWERS, P. E., Preconstruction Engineer
From JACK R. BECKERT, P. E., Assistant State
Highway Engineer - Engineering

Date July 23, 1971
Subject: MacDonald Pass

Reference is made to Lewis Chittim's memorandum dated July 22, 1971 in regard to the above-noted subject.

Please take action to assure appropriate fencing of this section of the Highway System regardless of whether it is the construction obligation of the Federal Aid portion or Forest Highway portion of the route.

JRB/be

Date Recd. Preconst. 7-26-71
MAIL ROUTE
Info
Attach
Initial
30 [illegible]
30 Field Design
30 Surfacing Design
31 [illegible]
32 West Region
32 Landscape
33 East Region
34 Hydraulic
36 Traffic
37 Pub. Hearing
38 Sec. Roads
39 Consultant Design
File

Avoid Verbal Instructions

3 REPORTER PRTG. & SUPPLY CO.

Lewis M. Chittim

Avoid Verbal Instructions

2

m.—Form 4 A

INTER-DEPARTMENTAL MEMORANDUM

MONTANA STATE HIGHWAY COMMISSION

Jack R. Beckert, P.E., Assistant State Highway Engineer-Engineering
rom Lewis M. Chittim, P.E., State Highway Engineer

Date July 22, 1971
Subject: MacDonald Pass

During the construction of the new highway over the MacDonald Pass, would you please make sure that the fencing is included as an item on the west side just past an area where there are a good many cows next to the shoulder of the road. It wouldn't surprise me if somebody gets into an accident before these things are cleared out of there.

LMC:ld

Lewis M. Chittim

Avoid' Verbal Instructions

Form FHWA-121 (12-67)
UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Bureau of Public Roads

TO : State Highway Commission - 32 SCK
Helena, Montana

DATE: August 3, 1970

In reply refer to: 08-24.4 DA2

FROM : H. N. Stewart, Division Engineer
Helena, Montana

SUBJECT: F 249(21), McDonald Pass - East

RECEIVED
AUG 4 1970
HELENA, MONTANA

We concur with the comments contained in your July 22, 1970 interdepartmental memorandum concerning your recent inspection of the subject project with one exception.

We were apparently not present during the discussion on fencing the east side. We agree that fencing through the range area is desirable; however, a fairly large portion of this project apparently is not used as range and will include exceedingly steep and fairly large cut and fill slopes. The need for fencing through this area is questionable.

Date Recd. Preconst. 8-4-70

Act	Info	MAIL ROUTE	Attach	Initial
		30 GOP RMH		
		30 Field Design		
		30 Surfacing Design		
		31 Dir. Sc Engineers		
	✓	32 West Region		
		32 Landscape		
		33 East Region		
		34 Hydraulic		
		35 Urban		
		36 Traffic		
		37 Pub. Hearing		
		38 Sec. Roads		
		39 Consultant Design		
	✓	File		

Act	Inf		
		RETURN TO M & F	
		MAY BE RETAINED	
	/	STATE HWY. ENGR.	
		CHIEF COUNSEL	
		ASST. S. H. E. ADMIN.	
		ACCOUNTING	
		PLANNING SURVEY	
		ASST. S. H. E. ENG'R	
		BRIDGE	
	✓	PRECONSTRUCTION	
		RIGHT OF WAY	
		ASST. S. H. E. OPS	
		CONSTRUCTION	
		MAINTENANCE	
		MATERIALS	
		OTHER	

BUY U.S. SAVINGS BONDS REGULARLY ON THE PAYROLL SAVINGS PLAN